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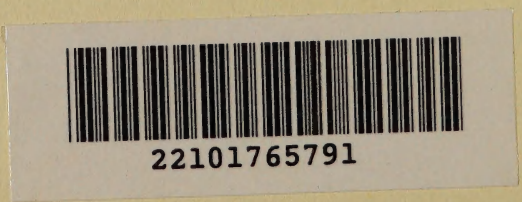

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THE

BRITISH AND FOREIGN

MEDICAL REVIEW,

FOR JANUARY, 1842.

PART FIRST.

Analytical and Critical Reviews.

Art. I.

1. *Ueber die Durchschneidung der Sehnen und Muskeln.* Von J. F. Dieffenbach. Mit 20 lith. Tafeln.—*Berlin*, 1841. 8vo, pp. 316.
On the Division of Tendons and Muscles. By J. F. Dieffenbach. Illustrated by 20 Lithographic Drawings.—*Berlin*, 1841.

2. *De la Ténotomie sous-cutanée, ou des Opérations qui se pratiquent pour la Guérison des Pieds-bots, du Torticollis, de la Contracture de la Main et des Doigts, des fausses ankyloses angulaires du Genou, du Strabisme, de la Myopie, du Bégaiement, etc.* Par le Docteur Ch. Phillips. Avec 12 Planches.—*Paris*, 1841. 8vo, pp. 416.
On Subcutaneous Tenotomy, or the Operations resorted to for the Cure of Club-foot, Wry-neck, Contraction of the Hand and Fingers, false angular anchylosis of the Knee, Strabismus, Myopia, Stammering, &c. By Dr. Ch. Phillips. With 12 Plates.—*Paris*, 1841.

I. The first of these works is from the pen of the justly celebrated professor of Berlin; and, although from the comparative lateness of its appearance, it is deprived of much of the interest with which at an earlier period it would have been received, yet as it embodies the results of this distinguished surgeon's immense experience, we shall, we are sure, perform an acceptable office in giving a somewhat lengthened notice of its contents. In a former Number (October 1839,) we analysed the works of Stromeyer, Zeis, Bouvier, and Little, and from these authors collected the main principles and practical precepts which have exercised so great an influence on the extension of the art of curing deformities. On the present occasion, therefore, we shall pass over with slight notice the opinions Professor Dieffenbach holds in common with others, and more especially occupy ourselves with those subjects in which either the skill or the boldness of the operator has suggested to him a different course. The volume is divided into twelve sections, each treating of the cure of a particular distortion, the whole being preceded by an introduction. This arrangement is convenient for the purposes of study, and will the better enable us to point out the peculiarities of the author's practice.

In the introduction, Dieffenbach yields to Stromeyer the exclusive merit of the discovery of "subcutaneous orthopædy," naming him its "inventor and founder," and awards to Guerin well-merited censure for seeking to appropriate to himself the greatest share of the credit, if not the entire discovery of the method. He justly disabuses his readers of the too prevalent idea that the simple operation of division of a tendon can alone restore a distorted limb.

"It is an erroneous conception of the nature of tenotomy to suppose it an operation which without further difficulty is capable of removing every distortion and contraction, in the manner that an incarcerated hernia is relieved by division of the strictured parts; more especially to imagine that an advanced degree of club-foot can be cured by division of the tendo achillis alone. The section of the contracted tendons does not remove the distortion of the limb, but prepares it for a well-adjusted mechanical treatment. In many contractions, on the contrary, the section of the tendon is the chief point, the mechanical after-treatment being but an incidental part of the cure, e. g. in wry-neck where the vertebræ have not become displaced, or in simple pes equinus," [the author might also have added in simple cases of angular knee contraction.] "Orthopædic operations are attended by the most brilliant success in cases where the unnatural contraction of particular muscles overpowers other muscles, the energy of which was previously normal. The result is less favorable when, in consequence of paralysis of certain muscles, their natural antagonists have so completely obtained the preponderance, that they are permanently contracted. In this case the section of the contracted tendons often induces merely an amelioration in the state of the limb; nevertheless the apparently paralytic state of the muscles is frequently removed by their restoration to activity through the cessation of the preponderance of the contracted muscles, resulting from their division. In this form of contraction, mechanical orthopædy is not simply inefficient, but aggravates the paralytic-like condition of the muscles; and the feeble limb is rendered completely unserviceable. Mechanical means are, as Stromeyer also states, equally ineffectual in spasmodic contractions. Nothing but the section of the contracted tendons and the deposition of a small intermediate tissue is capable of removing spastic contraction (habitueller krampf), precisely as in permanent contractions the normal form of the part is restored by elongation of the tendon." (p. 11.)

In the following important observations, Dieffenbach corroborates the opinions of Stromeyer:

"In the subcutaneous division of a large tendon, the achilles for example, the sheath of the tendon, contrary to what might be expected, is not divided, but in consequence of its size and laxity escapes the edge of the knife. Strempel has assured me that on the examination of subjects after death in which he had divided the tendo achillis, he invariably found one or at most two small openings in the sheath opposite to each other, and never a complete division: I have confirmed this by experiment; and the probability exists that the same result takes place in the living subject. This non-solution of continuity of the sheath is unquestionably of the utmost advantage, as it prevents extensive diffusion of blood in the adjacent cellular membrane. The promptitude with which mobility of the tendon is restored after cicatrization of the wound demonstrates that in consequence of its section, no firm adhesion of the external surface of the sheath has ensued." (p. 12.)

Wry-Neck. The first chapter of Dieffenbach's work treats of the nature and cure of wry-neck; but as we have already, in our notice of Stromeyer's excellent book,* furnished our readers with a summary of the history,

* Beiträge zur operativen Orthopädik. Hannover, 1838.

varieties, and treatment of this affection, we need not follow Dieffenbach through his elaborate disquisition on the subject. He disinterestedly assigns to Dupuytren the merit of having first resorted to the subcutaneous section of the sterno-mastoideus muscles, an honour which Stromeyer had erroneously awarded to Dieffenbach. The ordinary form of wry-neck arises from organic shortening of the sterno-cleido-mastoideus muscle; but, as Dieffenbach remarks, the obliquity of the neck may likewise result "from affections of the bones, ligaments, cellular tissue or skin, (cicatrices from burns;) lastly, it may proceed from an affection of the nervous system" (spastic or clonic contraction).

"If the bones be the seat of disease, its nature may be inflammatory, or a yielding of the cervical vertebræ from affection of distant parts; the deformity may also depend on paralysis of one side of the neck, and preponderating contraction of the other, principally of the sterno-mastoid. Large abscesses of long standing occasion shortening of one side of the neck, and obliquity of the head by the formation of adventitious tough cellular membrane; and still more frequently muscular rigidity (obstipitas muscularis) occurs in young children after suppuration in the neck, from the habit of inclining the head towards one side, usually towards that which is affected,—more rarely towards the opposite side." (p. 18.)

Our author's experience in this matter is founded on the successful treatment of sixty cases, which presented every variety in origin, degree, and age of the patient; the history of these is appended to the work. An interesting fact was noticed in one instance (p. 50,) namely, the occurrence of an optical delusion immediately after the operation. The obliquity of the head having been instantly removed, the patient exclaimed, "Everything appears awry, my head seems on one side," and although he looked at himself in a mirror he was not convinced of his error. This delusion continued but a short time after the operation. Troublesome hemorrhage happened in one case only (p. 51.) The patient, a healthy boy æt. 5, was operated on for congenital wry-neck, by section of the sternal and clavicular portions of the muscle of the right side. Copious hemorrhage from both punctures ensued, and the boy sunk into profound syncope. There was no jet of arterial blood, nor was any large vein wounded, the parenchymatous oozing was however as abundant as if a large vessel had been punctured or divided. After considerable difficulty and the repeated application of cold and compresses secured by adhesive plaster, the hemorrhage was arrested. The patient was on the following day able to quit his bed, the punctures united without any unfavorable symptom, and at the expiration of three weeks he was dismissed perfectly cured. In another case, (p. 52,) the professor was obliged to repeat the operation twice, before the deformity was entirely removed.

The preference to be given to the subcutaneous section is well illustrated by the success which attended his operation in a patient on whom the division of both portions of the muscle, at an interval of some weeks, by incision in the integuments, and exposure of the muscular fibres, had been previously effected without benefit. Case 60 affords an excellent illustration of the necessity of combining different surgical expedients, and advantageously shows how a master of his art like Dieffenbach can avail himself of them.

"J. S., a tailor, aged twenty, presenting scrofulous cicatrices at several articulations became affected with *caput obstipitum* in consequence of a large abscess behind the right ear which descended along the course of the sterno-cleido-mastoideus, and was accompanied with destruction of the investing integuments. A cicatrix two fingers' breadth remained and was firmly adherent to the muscle, which, together with the skin, constituted a homogeneous mass. A transverse section of the skin and muscle would have been requisite for the relief of the contraction, but I was, for well-known reasons, unwilling to swerve from the subcutaneous method. I was convinced that I could only obtain my end by two operations, performed at different periods, which I accomplished in the following manner. I dissected away the indurated ligamentous and prominent fold of skin and the adjacent condensed cellular tissue which adhered to the muscle. The portion removed was from three to four inches in length and one inch and a half in breadth. The anterior edge of the integument was then detached beneath, and by means of the twisted suture approximated to the posterior edge of the wound which constituted a fixed point. By this means the exposed muscle was invested with sound skin. Simple dressing of adhesive plaster was applied. The position of the head was as oblique as before the operation, and indeed it could not be otherwise. The most perfect adhesion had taken place on the fifth day, the last of the sutures having then been removed. Four weeks were permitted to elapse before resorting to subcutaneous division of the muscle, which I effected in the middle of its course, as notwithstanding the considerable shortening, the sternal and clavicular portions were not very prominent. The severed extremities separated fully an inch, and a considerable depression was felt at the part; the superincumbent skin was rendered tense by the retraction of the muscular fibres, and the head could be straightened. A few strips of adhesive plaster and a cravat furnished the dressing. Cicatrization ensued without suppuration, and in four weeks the head was straight." (p. 69.)

We have witnessed the successful performance of the subcutaneous operation, and are indebted to the experience of Dr. Little for corroboration of the statements of Stromeyer and Dieffenbach, that, occasionally, section of one portion only of the muscle suffices; commonly, however, the division of both is required; for although the second origin of the muscle be not prominent before the operation, it usually becomes so sooner or later after the resistance of the first is removed.

Club-foot. In the second section of the work we find the varieties of club-foot and their treatment elaborately discussed. The author gives a just representation of the great importance of this affection considered as a disease, and freely allows the merits of Stromeyer in originating its systematic cure.

"So long as surgery exists the name of Stromeyer will in relation to these distortions hold the first rank. The labours of his predecessors were utterly insignificant. The value of the operation for club-foot is not adequately estimated. This distortion is often a greater affliction than the loss of a limb, and many individuals formerly underwent amputation in the hope of walking better with the assistance of an artificial leg than with a club-foot." (p. 73.)

Dieffenbach himself, placed at the head of the large public hospital in Berlin, La Charité, quotes with approval the opinion of Stromeyer in favour of the establishment of hospitals exclusively for the cure of these distortions.

The frequency of club-foot is estimated ten-fold greater than hare-lip, with which it sometimes coexists. According to Dieffenbach it occurs much more frequently in boys than in girls, although the latter, he states,

are the more severely affected. Boys, on the other hand, present the affection in both limbs oftener than girls. Varus and pes equinus occur in the proportion of ten of the former to one of the latter. Congenital valgus is less frequent than pes equinus. Dieffenbach estimates the absolute frequency of club-foot to be in the proportion of one to every eight hundred or every thousand births. Jörg many years since gave $\frac{1}{1000}$ as the result of his observation. Dieffenbach entertains the opinion that the left extremity is oftener affected with club-foot than the right, and that when both suffer, the left is the worse.

We have been favoured by Dr. Little with a report of the cases of *congenital* club-foot occurring in patients under twelve years of age treated at the orthopædic infirmary in this metropolis, during the first year the institution was opened: it will be seen that it corresponds in several respects with the above statements:

Males and females affected with congenital club-foot under the age of 12 years,	Having both feet affected	34
	,, the right foot only affected	23
	,, the left foot only	6
	Total	63
Males under the age of 12 years affected with congenital club-foot,	Having both feet affected	21
	,, the right only	13
	,, the left	2
	Total	36
Females under the age of 12 years affected with congenital club-foot,	Having both feet affected	13
	,, the right only	10
	,, the left	4
	Total	27

All above the age of twelve have been excluded from this report; as a variety of circumstances, such as the necessity of the male obtaining his own means of livelihood, the dependence of the female upon her friends, and the greater timidity of the sex, tend, after the age of twelve, to increase in a greater ratio the number of male applicants. One cause of discrepancy between some of the results of the above list and the experience of Dieffenbach is, that our author has included in his estimate non-congenital as well as congenital distortions.

The most frequent concomitant of club-foot according to Dieffenbach is hare-lip. We have met with this combination, but according to our experience strabismus and stammering are more frequent complications. Dieffenbach has never witnessed adhesion of the fingers or supernumerary toes in conjunction with club-foot: we have observed both of these anomalies. In one instance, club-foot affected both extremities; several phalanges were absent; the perfect toes were united by a web-like membrane, and the fingers were similarly affected.

Dieffenbach recommends trial of plaster of Paris or the starch bandage in the treatment of infantile varus; although, if we may judge from his practice, he prefers the operation even in young children. Stromeyer is of opinion that a large proportion of club-feet in young children are curable without operation. We believe, however, that Dr. Little has recommended the age of from nine to fifteen months as the most favorable period for the operation, although applicable at every age. We have witnessed the practice of Dr. Little at the Orthopædic Institution, and have

seen the operation no less successful at the age of two months than in a congenital case at the age of fifty-six years.

Some difference of opinion exists among authors concerning the period at which extension should be commenced, and the rapidity with which it should be conducted. The majority of orthopædic surgeons in France, Germany, and in our own country, follow the example of Stromeyer, and await the closure of the puncture in the integuments before extending the limb. Our author ranks himself among these (p. 109.) He appears however to offer an apology on behalf of those who, like Velpeau, adopt an opposite course; thus, at page 96, speaking of the violence used by Sartorius, who, in order to divide the tendo achillis, exposed it by a large incision, he says, "It should be utterly discarded in the treatment of club-foot, as the cure is attainable in a more lenient and gentle manner. It is, however, easy in the present day to censure Sartorius, but if this operator had been preceded by Stromeyer, he would unquestionably have implicitly followed the footsteps of the latter. Stromeyer justly complains, that this obsolete practice, after the general diffusion of his improved method, should have been recently reintroduced. It will at once be understood that the same objection is not applicable to the violent extension of the larger joints affected with distortion after previous *subcutaneous* division of the shortened muscles and tendons." From this quotation our readers will collect that in the treatment of club-foot Dieffenbach is an opponent of *violent* extension after subcutaneous section of muscles, whereas he does not object to the use of violence in distortions of the larger joints of the body when the same method of operating has been resorted to. A great contradiction in principle apparently exists here to which we shall have occasion to revert hereafter.

In the chapter on division of other tendons besides the achilles, in the cure of the advanced degree of club-foot (p. 101), we are surprised to observe no mention made of division of the posterior tibial. We are aware that although Stromeyer has had recourse to this operation as an important auxiliary in the treatment of the severest forms of inversion, he has not laid so much stress on this measure as we should, from our own observation, have deemed necessary. A perusal of many of Dieffenbach's cases will show the treatment to have been unusually protracted, and we are convinced that it would have been much facilitated by resorting to the same means in relation to this tendon as with regard to that of the anterior tibial and gastrocnemii muscles. Theoretically we should have arrived at this conclusion; and our conclusions, *à priori*, have been justified by the observations and practice of Dr. Little. He has demonstrated the compound nature of talipes varus, showing that it depends on a threefold alteration of the position of the foot in relation to the leg, namely, *extension*, *adduction*, and *rotation*, a condition somewhat analogous to supination of the hand. The muscles which effect this threefold alteration must be the so-called extensors (gastrocnemii) and the anterior and posterior tibial muscles with the flexors of the toes; these not only adduct the foot, but raise the inner margin from the ground. If it be true as Dr. Little states (Treatise on Club-foot and analogous Distortions, p. 226), that the law of associated actions of muscles operates pathologically as well as physiologically, we should expect the anterior and *posterior* tibial muscles to be concurrently affected with the

gastrocnemii. And indeed when we examine a talipes varus, and observe the position of the foot, we cannot fail to be convinced that the posterior tibial muscle is affected as well as the anterior tibial muscle.

After determining the conjoint contraction of the muscles, the further question arises whether division of both is necessary. The object to be held in view in operating for club-foot is to remove with the knife as many obstacles to the replacement of the foot as possible: we thereby save the patient pain and expenditure of time in the after-treatment proportioned to our success in attaining the end proposed. The most perfect operation for severe club-foot, abstractedly considered, would be the division of every particle of fascia, ligament, tendinous and muscular fibre on the shortened or contracted side of the limb, which would be instantly followed by placing the limb in a straight position without the use of the slightest violence or stretching. But as this is impossible, we should endeavour to approach as nearly as possible to this desirable end, by the section of all the *actively* contracted tissues within easy reach of the knife; and among these, in many severe cases of talipes varus, is the tendon of the posterior tibial muscle. There are sundry objections to this operation in infants, which render it inapplicable; but in severe cases, especially in old subjects, it should never be dispensed with. A consideration of the bulk of the muscle, and the comparatively large size of the tendon even in an atrophied limb, will assist in the formation of an opinion on the necessity of its section. We have had the opportunity of witnessing at the Orthopædic Institution the effects of its division in a number of cases, at ages varying from twelve months to thirty-five years, and we have been informed by Dr. Little that he has never witnessed an unfavorable symptom from this operation. Its instantaneous effect in relieving the deformity is often very striking.

Dieffenbach appears to us deficient likewise in the mechanical part of the treatment. We are inclined to doubt whether, with the apparatus he describes, he has ever successfully treated the severest forms of varus (see cases 142-3-8); these we should think require a much nicer adaptation and a far more intimate application of the resources of the mechanist than those which he seems to have used. Dieffenbach is a brilliant operator and a ready inventor of the means of overcoming difficulties which beset the path of surgery; but, from a perusal of his work and from our knowledge of his character, we should think him wanting in the necessary patience and the necessary time requisite for the drudgery entailed on whoever undertakes the cure of distortions chirurgically and mechanically. Laudable and successful as have been the attempts of Stromeyer and his followers to explain to us the principles on which orthopædic treatment must be conducted, it will, on account of the frequent difficulty attending the mechanical part of the treatment, always remain to a certain extent an *exclusive* branch of practice.

The author's subdivision of the varieties or degrees of club-foot appears to us unnecessarily minute; thus he makes five degrees of pes equinus and the same of varus. Without desiring to detract from the value of this arrangement as a means of assisting the memory in relation to the severity of the cases, we should have thought that three subdivisions, at most, would have answered every purpose; and we would therefore propose the arrangement of all cases of pes equinus or varus under three

heads, the *slight*, *intermediate*, and *severe*. The following remarks, in which the author treats the relative frequency of the different degrees of pes equinus, are so full of interest that we will not abridge them:

"If the prevalence of the different forms of pes equinus be examined, it will be found that the first and second grades in which the heel is moderately elevated, occur much more rarely than the fourth grade, in which the foot forms a straight line with the tibia and the individual treads on the head of the metatarsal bones. This arises either from the severer forms of pes equinus being more frequently congenital than the slighter forms, or from the slighter forms being oftener cured spontaneously, or with little assistance from art. I have observed that hare-lip, which is curable by operation, occurs much less frequently in the slighter forms, in which a small or moderate fissure in the upper lip exists, than in the severer forms in which, besides the lip, the palatal process of the superior maxillary bone, and the hard and soft palates are severed. This disproportion is somewhat modified by the circumstance that infants affected with the worst forms of hare-lip and fissured palates (Wolfsoder Löwens-rachen) sink from atrophy produced by insufficient nutrition never becoming the subjects of operation, whereas those infants who are affected with slight hare-lip take the breast, suffer little from the deformity, and are exposed to no more risk than other new-born children. In like manner, the severe forms of pes equinus are more frequently congenital than the slighter; a portion of these also disappears, as the heel which at birth was but slightly elevated subsequently becomes depressed in the act of walking, the weight of the body operating as an extending power upon the tendo achillis and gastrocnemii. The acuteness of the angle which the foot forms with the tibia causes the entire weight of the body to act advantageously, and elongate the tendo achillis and muscles of the calf." (p. 120.)

The chapter on talipes valgus and calcaneus is a valuable contribution to our previous knowledge of the nature of these distortions. We may premise that our author employs the terms valgus and flat-foot (plattfuss) synonymously, and thus defines the characters of flat-foot:

"The flat-foot is that unnatural form of the foot in which the convexity of the dorsum pedis and the concavity of the planta pedis are changed into flat surfaces, so that the inner margin of the foot with the entire middle portion of the sole touches the ground. It is the opposite of varus in which the convexity of the instep is increased and the sole greatly hollowed out. Varus might with equal justice be named hollow-foot as valgus be called flat-foot. Club-foot arises from an unnatural contraction of the flexor muscles and rigidity of the tendons and ligaments; flat-foot, on the contrary, depends essentially on relaxation of the flexors and of the tendinous and ligamentous tissues of the foot; the ligaments which bind the tarsal bones to each other, and the aponeurosis plantaris are also relaxed. Usually a mere predisposition to flat-foot exists at birth. I have very rarely indeed witnessed the existence of the higher forms of the deformity in young children. Occasionally the valgus is aggravated by a rachitic distortion of the lower portion of the tibia and fibula. The unusual length occasionally presented in flat-foot depends partly on the removal of the arched form of the foot, and partly on the excessive separation of the tarsal bones from each other; as the resistance of the ground against the sole of the foot is distributed over the whole sole instead of being limited to the heel, the outer margin, and the fore part of the foot. No thickening of the cuticle or corns exist on the sole, but the skin is everywhere delicate and sensitive, often becoming inflamed in consequence of long standing or walking. From mere exciting causes the lower grade of flat-foot often passes on to a higher form.

"*On the exciting or occasional causes of flat-foot.* Precisely as in varus, which is on the increase, the point of the foot continually inclines more inwardly; we may observe that in valgus it becomes directed gradually more outwardly

With the increasing growth and weight of the body, the pressure on the tarsus forces the entire foot anteriorly, owing to the yielding of the ligamentous fastenings of the individual bones. The toes are no longer pressed properly against the ground, but, as may be seen in a naked foot, during the act of walking are affected with a sort of rocking motion (schaukelnde Bewegung.) The whole of the anterior part of the foot is but little used in progression, as the patient stalks about on the posterior half: ultimately he walks on the heel only. The middle part of the sole becomes convex, the metatarsal bones and phalanges being entirely raised from the ground; the gait is rendered stiff, and resembles that of a person walking on stilts. The origin of flat-foot may be spastic, of which the following is an interesting example: (p. 227-8.)

"Case. Mr. —— aged 22, of large and powerful frame, and in robust health, became affected in early infancy with weakness of the lower extremities, which impeded walking. An examination of the limbs shows nothing abnormal either in shape or development. The feet appear perfectly well formed so long as the patient retains the sitting posture, and he can perform with facility every natural movement. But in the erect posture and in the act of walking the attitude and gait are as unsteady and tottering as those of a person walking on ice with polished soles. His gait was still more unsteady on removal of his shoes and stockings, he being then often obliged to seize hold of any object to save himself from falling. The form of the feet was natural so long as they remained simply placed on the ground; but the instant the patient rose, and the feet were thereby compelled to bear the weight of the body, they assumed the form of flat-foot. The natural hollow of the sole disappeared; the toes retracted completely, and together with the front part of the foot were raised from the ground; the dorsum pedis presenting a concave form.

"I divided in the first instance high up on the instep of the left foot the whole of the muscles which bend the ankle, the tendons flew asunder with a cracking noise, after which the front part of the foot, with the exception of the great toe which remained contracted, fell as if paralysed, and the smaller toes hung down relaxed. The contracted state of the great toe was relieved by the section of its extensor tendon. By desire of the patient I postponed the operation of the right foot until the cure of the left should be effected. The foot was retained by means of a bandage in the position it had assumed on the division of the tendons. At the expiration of a few days, neither inflammation nor suppuration having taken place, a bandage was applied from the anterior surface of the leg as low as the toes. This plan was persevered with four weeks. The limb then presented a perfectly natural appearance, and maintained its position during the act of walking. The operation was subsequently resorted to in the other foot, the extensor tendons of the fourth and fifth toes also requiring division. The after-treatment was the same, and the result equally successful; both feet perfectly resembled one another. No trace of the former condition could be detected in his gait, the soles of the feet remained hollow, and the toes were properly applied to the ground." (p. 241.)

It is evident from a careful perusal of the above extracts that the author has committed a fundamental error in the synonymous use of the terms valgus and flat-foot, being thereby led to confound not merely two entirely different varieties of deformity, but probably as many as four or five distortions differing from one another as much in external appearance as in the nature of their origin. We have seen that he defines flat-foot to be that unnatural form of the foot in which the convexity of the dorsum and concavity of the planta are converted into plane surfaces, and he mentions, as a character entirely opposed to the ordinary forms of club-foot, that the flexor muscles of the ankle (gastrocnemii and other posterior muscles of the leg), and the tendons and ligaments of the foot are in a state of relaxation. This description, as far as regards external form, is perfectly

correct, if confined to true flat-foot, namely the deformity in which the individual treads unnaturally on the inner margin of the foot, the toes being more or less everted, the heel and posterior part of the sole bearing disproportionately the weight of the body, and the origin of which is relaxation of the adductor muscles of the ankle, the internal ligaments of the joint, and the plantar ligaments, muscles, and fasciæ. It is the office of the adductor muscles of the foot, and the fibrous tissues of every kind contained in the sole, to maintain the proper arch of the foot. When, however, from hereditary tendency, these structures are weaker than usual; when from imperfect nutrition of the whole system, these structures, previously of normal strength, become weakened and incompetent to resist the weight of the body; when in young people of both sexes, although well nourished, the necessity of standing or walking many hours daily, as in the occupations of errand-boy, printer, shopman, entails on the muscular and ligamentous tissues before mentioned, a greater amount of exertion and a greater stress than nature designed should occur before the attainment of the entire strength of manhood; then the abnormal form and position of the foot, correctly named flat-foot, arises. The arch of the foot, when no longer maintained by the efficient and energetic contraction of the tibial muscles, the powerful passive resistance of the deltoid and the two calcaneo-scaphoid ligaments, nor tied, as the architect would say, by the strong muscles of the sole of the foot, extending across the inferior part of the arch, and thus binding the pieces of the arch; when all these supports of one of the most elaborately-designed pieces of mechanism in the human frame are removed, the arch sinks, the astragalus is gradually depressed to the ground, and a flattened and consequently elongated everted foot remains, incapable of comfortably sustaining the weight of the body in the erect posture, and unfitted for long walks of recreation or necessity. We have heard it stated that this deformity prevails so extensively in some districts (partly, no doubt, from hereditary predisposition, but especially from poverty of diet combined with early laborious agricultural pursuits), as in Pomerania, that the government is unable to raise more than one third of the usual number of soldiers in proportion to the male population. Such is the true nature of flat-foot; but our author has included under this term: congenital talipes valgus from permanent contraction, the spasmodic t. valgus of which we have quoted from him the interesting cases given above, talipes valgus paralyticus, a deformity identical in external appearance with these, produced by complete paralysis of the adductor muscles and gastrocnemii, and lastly the rachitic form of valgus, arising, secondarily, from distortion of the knees or curvature of the tibial bones. All of these varieties of valgus must be accurately discriminated in practice, as they offer each a different prognosis and require different modes of cure. They cannot be classed with flat-foot; as besides the difference in their nature in the majority of instances, the arch of the foot is not destroyed nor the dorsum so particularly flattened as to become a diagnostic sign.

Dieffenbach has adopted a mode of operation for flat-foot similar to that we have seen resorted to at the Orthopædic Institution by Dr. Little, for the cure of the varieties of talipes valgus above enumerated. The muscles commonly contracted are the peronei, the extensors of the toes, more rarely the anterior tibial and the gastrocnemii. Often the abductors

of the great and little toes and the plantar fascia require division. This fact alone will point out the difference between most of the varieties of t. valgus and flat-foot. The cases in which section of the anterior tibial is requisite, appertain more properly to t. calcaneus (hackenfuss of Dieffenbach) than to t. valgus, and those in which section of the achilles tendon is required are cases of what Dr. Little denominates talipes equino-valgus, from their partaking of the characters both of pes equinus and valgus. These subdivisions of distortions of the feet appear complicated to those who have not studied the subject; but as the varieties of deformity are so completely distinguished from each other, we must admit a correct definition and nomenclature of them can alone render the subject intelligible to those who have not made it a special study.

An operation is not necessary for the relief or cure of the slighter forms of flat-foot and t. valgus. Cessation from laborious exertion, stimulant and strengthening lotions, properly-made shoes, well-adjusted mechanical supports, according to the nature and severity of the case, often suffice for the permanent relief of the inconvenience and deformity. In those instances, on the contrary, in which the deformity has existed a considerable time, in which decided muscular contraction has taken place, and the foot cannot be restored by pressure with the hand to a proper form, in which we could not expect success by mechanical and general treatment, except after the expenditure of considerable time, to be passed perhaps in the sitting posture, an operation may be resorted to. As in many cases the surgeon has only to contend against that form of contraction of muscles which is secondary, it is of the utmost importance carefully to discriminate those really requiring division. It is extremely desirable not to weaken the foot by unnecessary division of muscles, not to consider the operation in itself as the means of restoration, but as an adjuvant to the mechanical treatment which is in flat-foot and t. valgus, of even greater importance than in club-foot; the chance of relapse after operation being greater. In talipes equinus, and in many cases of t. varus, the weight of the body, after operation, acts beneficially on the tarsus, and tends to prevent relapse, whereas in the deformities we have at present under consideration, the greatest risk of failure arises from the difficulty of removing from the newly-restored tarsal articulations that weight they are at first so unequal to sustain.

We will now select from Dieffenbach's cases of flat-foot instances of each of the other forms of t. valgus, which we have described.

"Case. *Flat-foot. Division of the extensor tendons (flexus of the ankle) on the dorsum pedis.* Caroline S. aged twenty, a young woman of thick-set frame and scrofulous diathesis, affected with flat-foot on the right side. The dorsum pedis was flattened, the sole quite even, the malleolus internus large and prominent, the toes pointing outwards. The characters of flat-foot were rendered more evident by the act of walking, the foot then appearing more flattened.

"The patient experienced dull pains in the foot after standing any length of time. As her condition was gradually becoming more aggravated, I determined on the division of the *extensor* tendons on the back of the foot, which I effected by two punctures from without inwards. Instantly the foot fell as if paralysed, and the contracted toes assumed their natural length. I bandaged the limb and secured along the front part of the foot and leg a padded splint, by which means the foot was maintained in the position of pes equinus. The bandage was renewed after a few days; the punctures were found united; the foot continued

in a straight line with the leg. A lighter form of bandage was now resorted to, and was renewed occasionally until, at the expiration of a fortnight, a common roller was the only application. Within three weeks, permission was given to make the first attempts to walk. The position of the foot was quite natural. On first placing the limb on the ground the heel did not entirely descend; a few days later the power of the foot greatly increased, and soon the gait was perfectly natural. The form of the foot was perfect, the dorsum convex, and the planta hollow." (p. 233.)

"CASE. *Flat-foot from paralysis. Division of the achilles tendon.* Paulina R. a delicate child aged twelve, was, in consequence of an attack of typhus fever in earliest infancy, affected with weakness of the lower extremity, which induced an unnatural position of the foot, and at length led to the development of a complete flat-foot. The inner margin of the foot presented downwards; the external margin upwards; the planta outwardly. The form of the foot was not much altered. The section of the tendo achillis effected the restoration of the natural position; the wound healed on the third day. The operation appeared in the first instance to have aggravated the patient's condition. In the sitting posture the foot hung powerless, and fell either inwardly or outwardly, according to the influence of gravity. In order therefore thoroughly to support the foot I applied a splint and starch bandage, by means of which the patient was enabled to walk. Exercise to any great extent was for some time prohibited, but on removal of the bandage at the expiration of a month, the foot exhibited a natural position, and the involuntary excessive mobility had disappeared. From this period the foot was daily rubbed with spirituous embrocation and methodical exercises in the manner of walking, were instituted." (p. 238.)

"CASE. *Double talipes calcaneus (Hackenfüsse); division of the flexor (extensoren) tendons on front of the ankle.* C. M., aged 4 months, was born with two flat-feet (plattfüsse) of the highest grade. The toes almost touched the tibia and the heels pointed downward. The dorsum pedis was flattened, the planta convex. I divided the whole of the flexor tendons of the ankle (extensoren) in both feet above the articulations, and after moderately depressing the feet so as to give them a natural position I applied pasteboard splints which were maintained in position by starch bandages. At every period of dressing I depressed the toes more and more until their position resembled that of pes equinus. Shortly afterwards a starch bandage was alone applied, and at the expiration of five weeks the restoration of the foot was complete, and could not be distinguished from naturally formed limbs." (p. 242.)

We shall take leave of the subject of flat-foot and proceed to one equally interesting, the cure of anchylosis and contraction of the knee-joint by subcutaneous division of the contracted flexor muscles.

Anchylosis of the knee-joint. Contraction and anchylosis of the knee-joint are seldom congenital affections: they are usually the result of rheumatic and scrofulous inflammation. In those produced by rheumatism, the principal seat of the rigidity is the tendinous and ligamentous apparatus of the joint; in those resulting from scrofulous disease, the state of the extremities of the bones, especially of the articular surfaces, contributes to maintain the deformity. So great, however, appears the advance of orthopædic surgery, that cases of false anchylosis of many years' standing, (we have witnessed a successful cure in which the deformity had existed twenty-six years,) which, notwithstanding former caries and participation of the heads of the bones in the mischief, have been successfully cured, that is to say, straightened with more or less perfect restoration of the movements of the joint. Dieffenbach truly remarks that "it would often seem as if *true anchylosis* had occurred as a natural means of cure, yet after the lapse of many years, the articulation

admits a slight motion in the direction of flexion." It is evident from the experience of the last three years, that few incurable cases of anchylosis exist. However immoveable a joint may be on the cessation of the acute or chronic disease with which it may have been affected, the lapse of a few months or years, and the absorption of the lymph deposited in the interstices of the fibrous tissues entering into the articulation, as well as that effused between them, and which binds them to each other, leads to the reappearance of a certain mobility and prepares the limb for the skill of the orthopædist. A variety of complications at times present themselves, particularly the existence of large cicatrices in the vicinity of the joint, uniting in a mass the adjacent tendons, muscles, and bones. This source of difficulty is often easily remedied by dividing the band close to its adhesion to the bone. Another impediment is that which rests mainly on the authority of Professor Robert Froriep, the distinguished morbid anatomist of Berlin. On the dissection of an anchylosed knee, the description of which is given in his *Chirurgische Kupfertafeln*, Tab. 346, he found that even after the section of the ham-string tendons, he was prevented from straightening the knee through the resistance of the thickened fascia lata and fascia cruralis. On the separation of these fibrous bands he succeeded in extending the limb, from which he inferred that the rigidity and inextensibility of these tissues must offer a greater obstacle to the cure of deformities of the knee, than muscular contraction. A similar objection has been urged in relation to contractions of the ankle-joint, founded on the examination of a long-standing talipes dissected some time after death or after maceration. It was remarked, even after division of the gastrocnemius and other tendons, that the tarsus could not be replaced until the deltoid and other ligaments were severed. The same was observed by Mackeever.* In all these instances an oversight was committed when estimating the comparative amount of resistance offered by the muscles and other fibrous tissues after death. The greater part of the resistance of the muscles is of an active nature, and subsides soon after death, whilst that of the ligaments and fasciæ is passive, and continues until destroyed by an advanced stage of decomposition. Hence an undue importance has been attached, in post-mortem examinations, to the resistance of the non-muscular tissues. These are nevertheless a source of much difficulty, and consequently the section of contracted muscles must be accompanied, whenever practicable, by division of the shortened fasciæ and ligaments. In accordance with this principle, we have observed in the practice of the Orthopædic Institution, that for the cure of false anchylosis of the knee, Dr. Little, in addition to section of the ham-string tendons, divides whatever bands of fascia exist in the posterior part of the joint, as well as the dense prolongation of the fascia lata investing the vastus externus muscle, and adherent with this muscle to the outer condyle. We have repeatedly observed as much instantaneous relaxation of the joint result from this part of the operation, as from the separation of the muscles. The vastus externus muscle is often included in the section. Among other causes of false anchylosis of the knee, we may note severe fractures, gun-shot wounds in the vicinity of the joint, and even cicatrices of burns. These must be reckoned

* Treatise on Club-foot and analogous Distortions. By W. J. Little, M.D.—London, 1839, p. xxv.

among the least favorable cases for orthopædic operations. On the contrary, contractions that have arisen less from the extent and severity of the disease in and around the joint, than from the long retention of the limb in a state of inactivity, by which the flexor muscles have become contracted, justify the most sanguine expectations of success, and indeed, with proper management, may invariably be restored.

Our author ably states the privations often endured by those affected with these contractions, and the sacrifices they are willing to make for the obtainment of relief.

"They who have escaped from fatally destructive disease of the knee-joint with an anchylosis or contraction lead, in consequence of the inconvenient nature of the deformity, a more painful state of existence than those who have experienced a shortening of the limb from hip-joint disease. Whereas the latter are frequently enabled to walk with the assistance of a high-heeled shoe, or at the furthest with the aid of a stick, the former are frequently unable to use the limb as a support, but must submit to carry the limb suspended as a burden. The sufferers from acutely contracted knees avail themselves of an artificial leg, and many regard amputation as a blessing, to relieve them of that which has become a heavy burden to the trunk." (p. 246.)

The treatment of these contractions without operation is frequently successful. In appropriate cases frictions, manipulations, vapour and warm baths, and even the application of mechanical apparatus should be resorted to. But if much pain attend this method, irrespective of the great saving of time effected by the operation, the subcutaneous section of the contracted tissues should be preferred. The violent means which have at all times been justly condemned by the medical profession, and which in France has recently been carried to the point of extreme rashness by Louvrier (see Br. and For. M. Rev. XII. 552), should be utterly proscribed. We have often been as much amazed at the boldness of those empirics who practise this method in this country, as astonished at the patience with which it is submitted to. The presumption of the one party can only be explained, we should suppose, by the utter ignorance of medicine and surgery; and the confidence reposed by the other is attributable to the frequency with which surgeons of the first reputation declare incurable numerous cases of false anchylosis which are in reality remediable.

We have been reminded, in the perusal of Dieffenbach's work, of the circumstance, that individuals, like the entire body of a profession, may strike out boldly into a path of improvement, make the first step, usually the most important, and without a cause being assigned, stand still, leaving others, more fortunate or more skilful, to avail themselves of the information thus supplied. In our former review of works on division of tendons (October, 1839), we traced the progress of the method, and showed the long intervals during which the matter lay entirely dormant, until the brilliant genius of Stromeyer conceived the idea of the subcutaneous division of the tendo achillis, a proceeding which has since been applied by him and others to every part of the body. Dieffenbach informs us (p. 247) that nine years ago he divided the ham-string muscles for the cure of a contracted knee, the result of scrofulous caries of the joint. The case succeeded perfectly. This was subsequently to Stromeyer's discovery, a year indeed after Stromeyer had published several cases

in the journals of Germany and France, although Dieffenbach may not then have noticed them, or sufficiently have appreciated them. We think it probable that the idea of dividing the ham-strings in that particular case occurred spontaneously to Dieffenbach, and yet he did not repeat the division of a tendon for the cure of a distortion, except wry-neck, until his attention (as he informs us, p. 79,) was drawn to the value of the method of Stromeyer by Dr. Little in 1836. Since that period he has operated on hundreds of different kinds of deformity. Precisely as Thilenius, Michaelis, and Delpech found no imitators, Dieffenbach derived so little confidence from his operations for the cure of a false anchylosis, as not to have followed up his first success. His inactivity in this respect is the more extraordinary, as many public writers in Germany and France were at that time actively engaged in decrying Stromeyer's operation, and we know that Dieffenbach is not the individual to be rendered inactive by the clamour or false reasonings of others.

On again resorting to division of the ham-string muscles for the cure of false anchylosis, Dieffenbach appears until very recently to have followed Stromeyer's plan of awaiting the cicatrization of the punctures, and then to have gradually extended the limb by means of the apparatus recommended by Stromeyer. In order to present to our readers the chain of circumstances and reasonings which has since led Dieffenbach to pursue a totally opposite course, and one we believe that never ought to or will be extensively adopted, certainly not by British practitioners, we shall here give the professor's own words:

"This mode of after-treatment (that of Stromeyer), the gradual extension by apparatus, was often attended with insupportable and lasting pains, and was *sometimes* opposed by unconquerable difficulties, more especially by the changes which the joint had undergone through the long duration (many years) of the deformity. I resolved therefore to institute some experiments by means of forcible straightening of the knee and other distorted articulations. The results far exceeded my anticipations, as not only the severe forms of anchylosis and contraction of the knee-joint, which could not be relieved by gradual extension, were removed by the new plan, but the time requisite for the after-treatment was reduced from years to months, and the tedious sufferings of the one method exchanged for brief but violent pain of the other.

"I shall here describe this treatment more amply, as it is applicable not only to long-standing contraction of the knee, but also to other distorted articulations. After dividing the flexor tendons of the knee by the subcutaneous method, the patient lying on his stomach and the knee projecting beyond the edge of the table, I flex the knee so powerfully as to bring the heel in contact with the buttock. This done I move the limb in the opposite direction and extend it more and more forcibly, occasionally reverting to flexion, and continue this motion of the limb up and down until it is straight. Sometimes a loud cracking is heard, arising from the tearing asunder the unnatural adhesions. I have often found the united force of three or four men necessary, particularly in adult cases, *to break a knee straight*. Even in a case of true anchylosis which had arisen from a punctured wound of the articulation and subsequent inflammation and purulent effusion within the joint, I succeeded in breaking down the union between the articular surfaces, and straightened the knee. Immediately the extension is accomplished the knee should be surrounded with compresses and a flannel bandage; the limb carefully placed in a padded tin splint, and the whole enveloped with a second flannel roller.

"This treatment appears at first view more calculated to deter than worthy of imitation. One might be disposed to warn everybody against it. It would

indeed be frightful if the tendons had not been previously severed, for the violent pains which attend the method of gradual extension are produced by the tendons, even when they have been divided.

"At every removal of the bandages the limb requires to be thoroughly cleansed, and on reapplication uneven or too great pressure on any spot should be avoided, as superficial cutaneous sloughs might easily be produced. After complete cure [we presume of the inflammation and other results of the violence applied after the operation—REV.] the straightened but rigid limb should be perseveringly fomented and anointed with a relaxing unguent. The surgeon will in many cases witness the restoration of mobility in the joint, so that the individual will be enabled to walk without limping.

"In those instances of true anchylosis of the knee in the bent position which cannot be broken down, I would not shrink from undertaking to separate with chisel and saw the articulated surfaces which have grown together. I am well aware that the introduction of the point of an awl, nail, or of a knife into the healthy knee-joint has often proved fatal from suppuration and caries; I have been so unfortunate as to witness such cases, but an anchylosed joint is no longer a *joint*. This operation would hardly be more severe than that of sawing through the femur in anchylosis of the hip and knee-joints, with the view of forming an artificial articulation which has been recommended by other surgeons. The plan recently introduced in Paris by Louvrier, consisting of the sudden and violent breaking down and straightening (geradebrechung) of the knee by means of a machine, without previous section of tendons is, in my opinion, most unworthy of imitation." (p. 249.)

Have we really arrived at such a point in the history of orthopædic operations that we have to announce a retrograde movement to the unsurgical and barbarous treatment of Sartorious, a mode of treatment differing only from that above recommended by its being exercised on a smaller joint of the extremity (the ankle) instead of the larger and more important articulation of the knee? And this plan comes to us recommended by Dieffenbach one of the first surgeons of Germany! It is scarcely credible that the severe animadversions of Stromeyer on the method of Sartorius, the no less energetic remonstrance of Dr. Little in this country* against violence, and Dieffenbach's own denunciations against the employment of force in the case of distortions of the ankle, contained in the very work we have now under our notice (p. 109) should by the introduction and recommendation of "sudden forcible extension after subcutaneous division of tendons," be so completely set aside. Our author believes that the advantages of his method—sudden force after subcutaneous section of tendons—opposed to the disadvantages of the same violence applied by Louvrier by means of a machine without previous operation, arises from the simple circumstance of the operation being resorted to in the one method and not in the other. We consider the methods equally reprehensible, but if a preference could be given we believe it is not difficult to demonstrate why Louvrier's plan should be selected.

Louvrier's violence snaps tendons, tears old adhesions, fasciæ, and ligaments; violently stretches when it fails to lacerate nerves or rupture blood-vessels; yet were some or all of these results to take place, provided the skin is not torn and an external wound produced, the patient has a better chance of recovery without suppuration and gangrene than when Dieffenbach, in deference to the tendons, divides them with the

* Op. cit. p. xlix. The author cites the particulars of the method of Sartorius.

knife, leaving one or more punctures. We should sooner anticipate laceration of the skin when a puncture however small is made, as that may serve as a point from whence a rent may commence, or inflammation, suppuration, and gangrene take their origin. No increased danger can result from Louvrier undertaking to rupture tendons as well as other tissues. The rupture of the gastrocnemius tendon is comparatively a trifling accident, and if the rupture of the ham-strings was the limit of Louvrier's violence, we should not so much condemn him: but the danger in reality arises from the injury inflicted on the large nerves and vessels of the popliteal region; and if the sudden forcible *straightening* of the limb be accomplished, this injury must be equally great whether the resistance of the tendons has been previously removed by division or not.

Setting aside, for the present, the merits or demerits of Dieffenbach's plan, we are naturally led to enquire whether the premises which impelled the author to its adoption be just. We venture to assert that every case of contraction which can be immediately straightened without injury to the nerves or vessels by the "sudden forcible extension," is equally capable of restoration by the Stromeyerian method of gradual extension and without more pain; whereas, we, with equal positiveness, offer the opinion that many false anchyloses which by the "sudden forcible extension" cannot be reduced without great risk to the nerves and blood-vessels, may be restored by a more gentle process of straightening. These important structures, which after ten, fifteen, or twenty and more years' duration of the deformity have been accustomed to an altered position, have themselves become contracted or puckered up as the case may be, and sometimes bound in their new relationship to other parts by unnatural adhesions, the result of the former disease in their vicinity, may still admit the slow and gradual increase of the extending power, during which the interstitial absorption and redeposit of materials composing them necessarily accommodates them to the altered state of things. The insuperable obstacles opposed to the success of the gradual extension as asserted by Dieffenbach do not exist in cases curable without danger. Our author's experience of gradual extension is vastly different from that which we have witnessed. He speaks of the after-treatment of years' continuance being by his method reduced to months. We have seen the success of the gradual extension in cases where the deformity had existed even thirteen, sixteen, and twenty-six years, the ages of the patients varying from nineteen to forty-six years, and nevertheless the treatment in none of these cases lasted so long as twelve months. The assertion is incorrect, that after subcutaneous operation and during the subsequent gradual extension, violent pain results either in or from the divided tendons: on the contrary, the greater part of the pain experienced by this method is felt in front of the joint, about the patella, deep in the popliteal region, along the course of the nerves through the leg, and in the entire limb below the knee, owing, no doubt, to the necessary compression causing stagnation of the circulation. All these inconveniences diminish as the treatment advances owing to the numbness which ensues on continued compression of the limb.

Every one versed in the treatment of distortions after subcutaneous operation has, doubtless, discovered that after cicatrization of the punctures the progress of the after-treatment is much assisted by manipula-

tions, that is, manual attempts to accelerate the straightening of the limb, but the *gentle violence* thus employed differs as much from the "*sudden* forcible extension" as the effects of mild doses of powerful medicines differ from the heroic doses recommended by some practitioners.

The application of statistics as a test of the relative value of different methods in medicine will, we venture to predict, favour the opponents of the "sudden forcible extension."

Of twenty-three cases treated by M. Louvrier in Paris, three suffered severe and irreparable injury. One patient died at the end of three weeks, from rupture of the nerve and other structures; the second, in whom gangrene resulted from rupture of the popliteal artery, underwent amputation; and the third sunk from sloughing within six weeks.* In none was voluntary motion or complete straightening produced. Our author relates twenty-two cases of false anchylosis of the knee, and one of true anchylosis, in which he employed "sudden forcible extension" immediately after subcutaneous section of the tendons. Recovery ensued in the majority, in periods varying from one to eight months, or longer; some suppuration in the ham occurred in several; even after complete straightening of the limb on the operating table much resistance was occasionally met with, requiring considerable compression by bandages to maintain it in position; and in two instances (cases 16 and 28) superficial sloughs and suppuration resulted from the pressure, and protracted the cure. Inflammation of the articular extremities or of the joint itself, was not a solitary event, as in case 24, in which the complete straightening of the limb was necessarily abandoned. Cases 25 and 26 terminated still more unfortunately, the one by amputation of the limb, the other fatally.

There is much reason to regret that no account of the examinations of the amputated limb nor of the post-mortem appearances in case 26 is reported by the author. It would have been interesting and useful to have been informed whether the fatal symptoms depended on injury of the vessels or nerves, and what influence the mischief to the articular tissues exercised on the result. From the rapidity of the gangrene and fatal termination of the second case, we conceive that rupture either of the nerves or blood-vessels or both had been produced. From the author's omission of the date of the operation in case 25, we cannot with any confidence determine the matter.

The only case in which any degree of sudden violence can in our opinion be justified, is that in which true anchylosis has commenced, when the adhesions between the articular surfaces, still in greater part gelatinous, begin to receive the deposit of calcareous particles. But we cannot sanction the "united exertions of three or four men" being employed to *straighten* an anchylosed limb. A jerk with the hand of the surgeon only will often enable him to detect or probably to produce mobility where none appeared to exist or really existed. The joint may thus be rendered a few degrees straighter than before the examination, and the mechanical treatment may thenceforward be conducted uninterruptedly. We would recommend the postponement of even this slight degree of violence until after the cicatrization of the punctures. We give at length, the following striking case:

* Br. and For. Med. Rev., loc. cit.

"Case. *True anchylosis of the knee, with contraction. Section of the tendons of the semitendinosus, semimembranosus, biceps, and gastrocnemii muscles. Violent straightening of the joint. Cure.* Augustus S. æt 24, a young man of athletic frame, injured the right knee with a large sharp chisel. The wound was situated on the anterior and external part of the knee near the patella, and opened the joint. Violent inflammation of the articulation ensued, which, notwithstanding appropriate treatment by application of ice, leeches, and cooling medicines, proceeded to suppuration. The arthropyosis detached the soft tissues immediately investing the joint, and burrowed downwards to the calf of the leg. Several large incisions became necessary for the evacuations of the pus and dead cellular membrane. After long and severe suffering the wounds healed, leaving complete stiffness of the joint and contraction. A severe fall on the knee some time afterwards occasioned a fresh attack of inflammation, requiring a repetition of leeches, cold applications, &c., and the subsequent use of tepid lotio plumbi and oleaginous embrocations. The knee was bent beyond the right angle, and entirely immoveable. The heel was retracted through contraction of the gastrocnemii, the foot constituting the third grade of pes equinus. No emaciation of the leg and thigh existed, both being of equal size with the sound limb. Notwithstanding the complete rigidity of the joint, most violent pain was produced by any attempt to straighten it, or to effect further flexion of the limb. The patient moved about with difficulty, and with the assistance of crutches, and he continually sought repose in the recumbent posture. He regarded amputation as a desirable termination of his case.

"I was not prepared to expect that after section of the ham-strings I should be enabled forcibly to straighten the limb. I provided myself therefore with a species of chisel, with which I purposed to effect, if necessary, the separation of the articular surfaces. The patient was placed in the prone position on the lowest operating table, both knees projecting over the edge, and when he was firmly secured on all sides I effected the section of the semi-membranosus, semitendinosus, and biceps muscles, by two subcutaneous punctures; the operation was the more easily completed, as the leg stood perpendicularly and was held in this position by an assistant. A few drops of blood only escaped from the puncture, a somewhat larger quantity was effused beneath the skin. The patient's body, and particularly the thigh, being now fixed by several powerful assistants, three others seized the leg, and at a given signal bent it so suddenly that the heel touched the buttock, on which we immediately straightened it with the same force. A cracking noise was heard, especially when flexion was accomplished, as if dry bony matters and ligaments were torn asunder. The operation was finished by dividing the tendo achillis." [The limb was dressed as in former cases, and the patient removed home in a sedan chair.]

"The pain which had been severe at the operation, diminished within two hours afterwards, and after the escape of a considerable quantity of blood through the bandages it subsided more and more; and in a few days it remained very trifling. On dressing the limb a great quantity of partially decomposed coagula was found between the skin and bandages. The punctures suppurated slightly, that by which the tendo achillis was divided had healed by the first intention; the limb, in other respects, looked well, neither superficial nor deeper seated inflammation existing. The whole was carefully cleaned and replaced in the splint as before. Complete recovery of the patient's health took place without any general disturbance or the occurrence of a single unfavorable symptom. The limb was perfectly straight, the foot reached the ground, and the convalescent began, after the lapse of a few weeks, to walk in his apartment with the assistance of a stick. Mobility of the knee-joint began a month later, and increased from month to month, so that at present the limb is capable of considerable flexion." (p. 277.)

This must be regarded as a most *fortunate* case, but does not dispel our well-grounded fears of the violence resorted to. We entertain doubts

also, notwithstanding the *cracking* and *tearing* of tissues, whether true anchylosis existed. The pain which is reported to have been produced by attempts to bend or straighten the knee before the operation indicate the existence of mobility, however slight.—One word more and we take leave of this subject. We request our readers to contemplate for a moment, apart from the danger of the method even in experienced hands, the mischievous results of recommending this method ex cathedrâ; the frightful example on the minds of the pupils of a clinical class in the sanction given to the forcible tearing asunder of a man's limb by half a dozen or more powerful assistants, more especially after a breach of surface has been effected.

Contraction of the Hip-joint. The cure of deformity of the hip-joint by operation was first undertaken by Stromeyer. The treatment is of course applicable to those cases only in which muscular contraction is entirely or almost entirely the cause of the lameness; cases in which dislocation or anchylosis have resulted from ordinary hip-joint disease must be excluded. In many instances, however, this disease of the joint has subsided without disorganization, the limb remaining contracted in that position in which it was held by the flexor and adductor muscles of the thigh during the continuance of the disease. The necessary frictions, manipulations, and exercise of a joint thus rendered rigid, are too often neglected, and the limb continues permanently contracted. Mechanical means may succeed in restoring mobility after the lapse of months and even of two or three years. At the expiration of this lengthened period, however, the muscles have usually become structurally shorter than natural, and a cure cannot be obtained without their division. Another class of cases, in which an operation is the sole remedy applicable, is that in which contraction of the joint has existed from birth, usually in conjunction with similar affection of the remaining articulations of the lower extremity. Here the difficulty of complete cure is greater, as the muscles are not only structurally shorter, but they are likewise spastically contracted from the diseased condition of the medulla spinalis, on which such congenital contractions depend, being usually permanent. We have been favoured with the results of subcutaneous muscular sections in cases of this kind at the Orthopædic Institution, and they justify Stromeyer's extension of his method. Our author's chapter on the subject is rich in materials for reflection. He agrees with Stromeyer as to the choice of cases, but applies his own method, "sudden forcible extension," to the hip (and elbow) as well as to the articulation of the knee. We are bound again to express our decided dissent from the proceeding in these cases likewise. All the benefit attainable from the operation in any case can be obtained by gentle mechanical means afterwards. The violent method saves trouble to the practitioner, and when successful may probably spare the patient some suffering; and, but for the risk attending it, would on that account be preferable. Careful extension and proper mechanical contrivances after cicatrization of the punctures, spare patients the suppuration and loss of skin recorded at p. 284, and the inflammation of the joint mentioned at p. 289 of our author's work.

Our author states that he has found division of the tendo achillis beneficial in cases where the patient's toe only reached the ground from the results of hip-joint disease. Unquestionably contraction of the gastroc-

nemius occasionally results from this cause. In every case that has come under our notice, the contraction has been slight and remediable without operation, or if more severe, and the muscle from long continuance of the contraction has become structurally shorter, no division of the tendo achillis could have been serviceable; as, in such cases, the contraction has been the necessary result of the elevation of the heel from the bent position of the knee, itself caused by the unnatural position of the hip. If the hip contraction be curable, then may division of the t. achillis be advisable. If incurable, the only effect of division of this tendon would be to force the patient to place the foot, by means of a high-soled boot, to the ground in a state of extreme flexion, a position which experience has shown us to be irksome. Patients usually prefer a boot the heel of which is higher than the toe.

We have in a former Number narrated the particulars of a highly interesting operation performed by Dieffenbach for the reduction of a dislocation of the humerus of two years' standing, by division of the pectoralis major, latissimus dorsi, teres major, and teres minor muscles. The results were worthy the Professor's fame. Two other cases are given in the work we have under our notice: in one of these the luxation had existed "many" years; reduction was not effected, in consequence probably of the glenoid cavity having become obliterated. The third case was an unreduced dislocation of the tarsus backward of one year's duration. Reduction was accomplished, but the amount of benefit derived is not mentioned.

Contraction of the Ankle-joint. We shall, under this head, content ourselves with the narration of one striking case:

"Case. *Old luxation of the tarsus, reduced after section of the tendo achillis.* A labourer, aged forty, fell from a considerable height. The right foot sustained the principal part of the shock, and a dislocation of the tarsus backwards was the result. The subsequent inflammation was treated by cold lotions and leeches, but reduction of the dislocation was not effected. The patient placed himself under my care a year subsequently. The length of the sole of the foot was reduced two inches, explained by an equivalent projection of the heel. The heel was also elevated the same distance from the ground. The achilles tendon was very prominent posteriorly, and with the tibia occasioned the formation of a long pyramidal interspace between them. The ankle was quite immoveable. In the act of walking the anterior part of the sole alone touched the ground, the heel remaining elevated two inches. The gait resembled that of a patient affected with pes equinus, but more laborious. On attempting to reduce the dislocation, I found the limb, as I expected, quite unyielding; I therefore determined on division of the tense, thick, and indurated tendo achillis. The patient was placed on a table, and the thigh and knee being securely fixed by one set of assistants, three others effected extension of the foot by means of a long hankerchief passed around it. During the gradual increase of the extension I punctured the skin on the outer side of the tendo achillis, rendered excessively tense by the extension; passed the curved point of the knife beneath the tendon, and divided it whilst withdrawing the instrument. A loud crack was heard. The assistants desisted from the extension whilst I manipulated the foot in order partially to extend the ligaments and facilitate the restoration. The extension was recommenced with increased vigour, during which I, with considerable force, reduced the luxation. The foot and leg were then enveloped with bandages, saturated with solution of starch, and the patient was removed to bed. The symptoms which followed were quite unimportant, and in a few weeks' time the patient was discharged from my care." (p. 302.)

Contracted fingers and toes. Under the head of treatment of contracted fingers and toes by operation and "forcible extension," among several cases successfully treated by this method, is one (case 58) which bears us out in our condemnation of the method when applied to the larger joints, as the violent extension at the time of the operation did not succeed in straightening the finger, whereas gradual extension afterwards succeeded perfectly.

Curvature of the spine. Dieffenbach does not speak favorably of the division of the muscles of the back; and as his experience must have great weight, we will here quote his very impartial opinion. We must premise, however, that Guerin unjustly receives the merit of having first proposed the section of spinal muscles. Stromeyer divided the rhombodei and latissimus dorsi for a lateral curvature before 1834. This reclamation, due to Stromeyer has, as far as we know, never before been publicly made. He did not then extend the operation, entertaining no confidence in its results.

"Guerin's operation of dividing contracted muscles of the back for the cure of spinal distortion has excited great wonder. In the first place an important objection may be offered, that slight distortions induced by augmented muscular action are curable without operation, whereas in severe deformity of the spine, little benefit can be expected from section of muscles. These objections can, however, have no weight if experience decide favorably on the value of Guerin's method. I have once only tried it in scoliosis, and witnessed no more advantage than I had anticipated, namely, some trifling amendment." (p. 312.)

Muscular spasm. A more interesting contribution to surgical science is the treatment of a case of chronic twitching of the muscles of the face by subcutaneous tenotomy. The case is unique in the annals of orthopædy, and does as much honour to Dieffenbach for his skill in its performance as is due, to use our author's words, to "the talented Stromeyer who first proposed it." We will conclude our notice of Dieffenbach's volume with an abridged translation of it.

"CASE. *Chronic spasm of the muscles of the face; subcutaneous division of the muscles.* Herr U., æt. 43. Nine years previously he was suddenly seized with a spasm of the *orbicularis* of the right eye, in consequence of exposure to a draught of cold air when heated. The convulsive spasms gradually extended over the whole of the muscles of this side from the forehead to the chin, accompanied by severe headach and lacrymation. The face was constantly drawn into the strangest grimaces; the forehead wrinkled, the eyelids alternately opening and shuting, and the corner of the mouth drawn forcibly upwards by the *zygomatici* and *levator anguli oris*, so as to prevent or greatly impede speaking. He could temporarily relieve these distressing spasmodic actions by strong pressure with his hand on the cheek, so as to steady the muscles. On the other hand, the voluntary contractions of the *orbicularis* in the attempt to shut the eye would induce the spasms; and hence he had difficulty in going to sleep on account of the spasm excited on closing the eyes. The operation was performed on the 11th June.

"A long pointed fistula-knife was inserted under the skin of the right corner of the mouth and thrust upwards under the skin to the lower border of the under eyelid. The cutting edge of the knife was then turned towards the muscles, which were divided, in retracting the knife, without touching the skin. By this means the lower portion of the *orbicularis*, the *zygomatici*, and the *levator ang. oris* in their middle, were divided. The knife was then introduced through the mucous covering of the outer angle of the eye, passed on under the skin, and

once more divided the *orbicularis* on its retraction. A third puncture was made upwards through the mucous portion of the upper lip beneath the nose, and the *depressor alæ nasi* divided. The morbid muscular twitchings were seen to diminish after every incision. A firm compress of charpie and sticking-plaster was laid over the whole side of the face, and cold poultices applied for several days. After this the ecchymosis and swelling gradually subsided, and the cheek assumed its healthy aspect. At first some feeble twitches were observed, which after changing to a slight vibratory movement of the inner angle of the eye, finally disappeared." (pp. 315-16.)

II. The work of M. Phillips, as its title expresses, does not relate solely to distortions of the limbs, but includes the treatment of squinting and stammering. We are inclined to believe that by this time the present knowledge of these subjects is nearly exhausted; at all events we doubt not that the patience of the readers of our numerous journals is nearly so. We shall therefore confine our notice of M. Phillips's book to those parts which refer to distortions of the limbs and wry-neck. Much of this author's experience appears to have been obtained in Berlin. He is a close follower of Dieffenbach, to whom indeed the work is dedicated; and it has been published so quickly after the treatise we have already noticed as not to contain much that is novel or important. Our task therefore will chiefly consist in selecting whatever of the latter we can find, and in recording those opinions and points of practice in which he differs from the best authorities.

One of our offices as reviewers—and by no means an agreeable one—is to set the professional public right as to the origination of curative methods or theories. Such an appropriation would be unimportant beyond satisfying a sense of justice, were it not for the circumstance that the value the public is disposed to set upon a theory is determined and enhanced by the knowledge of the literary and professional character of the propounder. We do not wish to imply that these observations are specially called for in relation to our present subject: on the contrary, they apply generally. No subject in medicine or surgery ever made such rapid strides as that of subcutaneous section of muscles and tendons during the short period that has elapsed since what we may almost term its discovery by Stromeyer in 1830. The extension of the method from wry-neck and talipes to every articulation of the extremities, and to other organs, as the eye and tongue, has been so rapid, and the modifications in the mode of operating and the kind of instruments and apparatus employed have been so numerous, and perhaps often simultaneously adopted by practitioners in different countries, that when perusing the treatises of various authors we have been continually perplexed at meeting with the most opposite assertions as to the claims of priority. This is in our opinion accounted for mostly by the above explanation, and partly from successive authors having been imperfectly acquainted with the published labours of their predecessors. A comparison of dates of the first operations of different authors shows that Stromeyer found imitators in France, in the persons of Bouvier, Duval, Cazenave, and Guerin, and among our own countrymen in the persons of Whipple and Little, before the method was embraced in its native country by Dieffenbach. It is true that its adoption was nearly simultaneous by many, yet the inactivity of Stromeyer's countrymen is remarkable, and illustrates the old proverb of the prophet's

want of honour in his own land. The merit of the first performance of the operation for strabismus is due, we believe, to Dr. Pauli of Dresden, although Stromeyer had previously recommended it. The credit of the suggestion has been unjustly claimed by Guerin. We have elsewhere mentioned that Stromeyer long since entertained and acted upon the idea of curing spinal distortions by muscular sections. The priority in this matter has likewise been assumed by Guerin. The charitable supposition is that Guerin may have been so incessantly whirled in the sphere of his own orthopædic practice that he has directed little attention to the examination whether the ideas he has emitted have originated with himself or with others. Hence almost every theory and point of practice in orthopædy has been claimed by him. These reflections have been suggested by the perusal of the treatise of M. Phillips. He is exceedingly severe against Guerin; we are ourselves disposed to coincide in the propriety of many of his censures, although we are reluctantly compelled to believe that pure love of science is not the only source of them. So much acrimony lurks throughout his observations that we fear professional jealousy has had no small share in their production. In M. Phillips's catalogue of complaints against Guerin the claim to the discovery of the etiology of congenital distortions might have been included. Stromeyer, in his little work formerly noticed by us "Ueber Paralyse der Inspirations-muskeln," laid the basis of the theory of their dependence on muscular contraction, afterwards (in 1836) fully demonstrated by Dr. Little, from his own researches and from the testimony of B. Bell, Duverney, Boyer, Jörg, Rudolphi, and others. Guerin, notwithstanding, appropriates to himself the origination of the theory.

A curious explanation of the difference in the etiology of talipes equinus and t. varus is offered by M. Phillips, viz. that contraction of the internal part of the gastrocnemius, or probably of the soleus, only produces t. varus; whereas contraction of the whole of the muscles of the calf induces t. equinus. Such might be the difference in the cause of these varieties of distortion if the origin of the contraction were mechanical; but, as Dr. Little has proved, these distortions have a dynamic origin. The circumstance that determines the production of t. equinus or t. varus, is the greater or smaller number of filaments of nerves, affected at their origins in the medulla spinalis. If those distributed to the extensors of the leg be excited, spasmodic contraction of the muscles supplied by them will be induced, and the spastic form of t. equinus result; but if the nerves supplying the adductor muscles, as well as those of the extensors be involved, t. varus will ensue. *External* causes may modify or augment the deformity, but the distinctive characters of the individual forms are as well defined as those of variola and rubeola. We think M. Phillips too warmly disposed towards the operation. He is certainly much in error when, in treating of the possibility of cure of club-foot by mechanical means, he says, p. 44, "It would be superfluous to resort to them for the cure of congenital club-foot; the power of the muscles would inevitably prove too great for the successful use of apparatus." We deduce from this observation either that our author has never attempted the cure of congenital club-foot without operation, or that having attempted it, he has failed through the selection of improper cases, or from the employment of inadequate mechanical contrivances. Instances of cure must

have occurred occasionally within the experience of most surgeons prior to the successful introduction of the method by operation. We have recently witnessed cures effected by the mechanical means, it being the practice at the Orthopædic Institution to treat without operation all infantile cases not of the higher grades of severity.

The following remarks on redivision of tendons suggest grave matter for reflection:

"The repetition of the operation is more especially useful in talipes equinus of the third degree, or in severe t. varus when inversion of the foot exists. This second operation should never be performed at the same situation as the first, as sufficient power of reproduction does not exist: the vitality of the part is diminished, and the capability of reunion insufficient. The risk of the divided ends remaining separated, ununited, would be incurred. The redivision should consequently take place above the part first divided: the newly-cut surfaces receives its blood-vessels in a more direct manner, and reunion is as perfect as at the first section. It is usually requisite to divide the tendo achillis several times, for the completion of the cure of severe talipes equinus. A young man affected with the highest degree of t. equinus, underwent at Berlin the division of the tendo achillis twenty-two times. I was present at the last four operations, which were done within the period of a few weeks." (p. 54.)

We regret to be obliged to dissent from almost every statement contained in this extract. We have never found redivision of the tendo achillis necessary in any, even in the severest instances of t. equinus; and with respect to the highest grade of t. varus, we have but rarely effected the section three times. The cases of t. varus, in which we have been compelled to repeat the operation, have been in those of adults affected with severer distortion than any figured in either of the works before us represent.

Mr. Phillips's opinion of the point at which redivision should be effected is derived from the practice of Dieffenbach, and rests upon a fundamental physiological error. He assumes that the arteries of the lower portion of the tendon are derived entirely from the upper portion, and consequently that after the first section and subsequent healing, the function of the arteries supposed to supply the lower portion must be arrested or diminished, so that the operator on redividing the tendon below the first divided, would be exposed to the chance of witnessing continued separation and non-union of the divided extremities. It is contrary to fact to suppose that the tendo achillis, for instance, is not supplied with blood from below and from the adjacent cellular tissue: were it not so, the lower extremity of the tendon would be as incapable of performing its share of the restorative process, by the effusion of lymph or extension of its vessels, or by granulation, after the first section as after the second. The experiments of Von Ammon, Gunther, and Bouvier have demonstrated that the organization of the effused lymph or coagulum formed between the severed extremities of the tendo achillis proceeds equally from both. We may also remark, that even if it could be proved that tendons receive their supply of blood solely from above downwards, it would not serve as an argument against the possibility or probability of union taking place in the part divided below a former section. For a certain period after union had ensued in the part first operated, the quantity of blood circulating through the uniting medium would be greater than through an equal portion of original tendon, the organization of the

intervening lymph being greater than sound tendon, and it has been demonstrated that the adjacent parts of the tendon continue for a time swollen and the vessels larger. Experience also proves that when redivision of the tendo achillis is performed below the part first operated, perfect reunion ensues. We have been informed that it is the invariable practice of Dr. Little, when a second operation is required, to sever the tendon below the part first incised, and the reasons he assigns for this preference are that in the severe forms of t. varus, in which alone it should be required, the tendon is placed at so little distance from the deeper tissues, that it becomes often adherent to their investing fascia; consequently, the performance of the second operation above such adhesion might impede the descent of the heel, whereas its performance below the point first operated on readily permits the necessary elongation of the part. The surgeon who is about to operate on so severe a form of t. varus, that the necessity of again resorting to the knife appears not unlikely to occur, should take a hint from this reasoning and experience, and divide the tendon high up instead of near to the os calcis.

We must more especially protest against the practice which, if not positively recommended by our author as worthy of imitation, is tolerated by him as necessary, namely, the division of the tendo achillis on twenty-two successive occasions, in the same patient. We confidently aver, unless the case were from some peculiar obstacle incurable, which it does not appear to have been, that if the same amount of time and pains had been properly bestowed on twenty-two occasions to the mechanical after-treatment of the patient, the repeated operations might have been dispensed with. The same censure awaits the practice M. Phillips (p. 80) quotes from Dieffenbach, that of being obliged to divide the tendo achillis four times before commencing the mechanical treatment. This early redivision must be totally unnecessary, unless the surgeon has neglected to prepare his mechanical apparatus beforehand.

The chapter of M. Phillips devoted to the consideration of t. valgus merits perusal, as it is a more accurate definition of the varieties of this deformity than any we have met with.

The chapter on the cure of congenital and acquired contractions of the hand, although not containing much original matter, raises some very important questions. Much more extended experience of the utility of sections of numerous muscles of the hand and arm is necessary before we can lay down any precise rules by which the practitioner can be guided either in the selection of cases, or in the mode of operation. In principle, subcutaneous orthopædy is equally applicable to the upper and lower extremities, but a wide difference exists in the application of the principle. The movements of the ankle consist, it is true, of extension, flexion, adduction, and abduction; but in the act of walking, flexion and extension are alone absolutely necessary; adduction aud abduction of the foot are only required under extraordinary circumstances. Surgical orthopædy is capable of restoring a useless leg, and fitting it for the ordinary purposes to which in the civilized state of society it is applied; but cannot adapt it to the extraordinary use made of it by the athletes or professional dancer. But in the case of the hand, every individual from the day labourer to the watchmaker, or the workman in the minutest branch of the arts, avails himself constantly not only of flexion and ex-

tension, but of pronation and supination, those movements which are analogous to the inversion and eversion of the foot. If we at the same time bear in mind that, notwithstanding the analogy in these movements of the upper and lower extremities, the acts of pronation and supination are far more delicate and elaborate than the analogous movements of the foot, if we remember that not only the movements of the hand are much more complicated, but that the several fingers possess each their allotted muscles and consequent functions, we shall at once perceive that although in principle orthopædic operations are equally applicable to the hands, the difficulty of applying the method must be immeasurably greater. The anatomical conformation of the arm and hand, the smaller space in which is congregated a larger number of nerves, muscles, and tendons, the difficulty of dividing those which may be contracted without disturbing or exciting unnatural adhesion with those which may be normal in their action,—all combine to retard the progress of orthopædy in this direction. We have already remarked when speaking of Dieffenbach's views on this subject, that operations of the elbow are usually successful; in the hand also when merely unnatural flexion or extension exists, whether the result of congenital contraction, or acquired from dental irritation, from long continuance of the wrist in either of these positions, or the result of local inflammations, abscesses without great loss of substance, and sprains and fractures,—the functions of the wrist may be restored. Thus we have witnessed at the Orthopædic Institution cases of contracted elbow and wrist from all of these sources which have yielded perfectly by section of the biceps, or of the flexors and extensors of the wrist, the functions having been completely restored. We have also seen division of the supinators and pronators followed by more or less complete restoration of the deficient functions, according to the cause of the contraction. We may briefly state the order of success in these cases to have been as follows: organic shortening of muscles from long-continued relaxation, as from accidental injuries and inflammations; congenital contractions; spasmodic contractions from fever or other general disturbance during infancy; contractions from paralysis of antagonists, and contractions from abscesses with loss of substance, grangrene, &c. The result of our observation leads us to assert that, however discouraging at the outset, contractions of the hand are not irremediable; on the contrary, although few are perfectly curable, the great majority are susceptible of considerable improvement. Although the degree of restoration of function varies, yet in nearly every case that has come under our notice, the deformity which is alone sufficient to impel individuals of the upper classes of society to seek relief, has been removed. A wide field however remains open for future research and experience; and although we would strenuously discountenace all rash and wholesale division of tendons in these cases, we venture to recommend the matter to the attention of those who are possessed of an intimate knowledge of the anatomy of the parts, and are endowed with a large share of patience to watch and elaborate results. The loss of a lower extremity is a great privation, but experience has convinced us that the deprivation of the use of an arm and hand is felt as a far greater affliction; so much the greater therefore must be the reward of him, who by adding to the common stock knowledge on this subject, can so largely contribute to the welfare of his fellow-creatures.

M. Phillips has devoted a chapter to the cure of false anchylosis of the knee. He advocates the violent extension of Dieffenbach, the impropriety of which we have already sufficiently discussed, and need not therefore again refer to it. We perceive however that M. Phillips has not encountered the fatal difficulties described in some of Dieffenbach's cases, obviously because he has wanted the boldness (rashness?) to follow out Dieffenbach's proceeding to the utmost; he was consequently compelled to trust much more to the slower mechanical after-treatment. The cases of false anchylosis, related by M. Phillips, do not impress us very favorably with the results of the operation in his hands.

Our notice of these works must now be brought to a conclusion. We have endeavoured to acquaint our readers with the more interesting of the contents; but we beg at the same time to recommend both for perusal, more especially Dieffenbach's volume, which possesses such abundance of materials. We may be considered somewhat severe in our strictures; but when it is considered how much and irreparable injury may be inflicted on a chirurgical method still new, by the incautious, unreflecting manner in which orthopædic operations are resorted to, we think, notwithstanding the European reputation of Dieffenbach as a surgeon, we ought not to hesitate to state what we regard as his errors, and wherein we differ from him. His book loses much of its utility from the hasty manner in which it has been written. The numerous cases which might have been rendered of immense importance to the statistics of deformities, are drawn up without dates or mention of the precise results derived after a given period of treatment. Thus we are often told that the deformity had existed "many years," "from the earliest period;" that at the expiration of "some weeks," "a few months," the patient was restored, &c. And we miss those minutiæ of anatomical relation, that exact description of the pathological condition, without the possession of which the practitioner cannot compare results and judge for himself of the value of different methods of treatment.

ART. II.

1. *Vergleichende Darstellung der von den Hausthieren auf Menschen übertragbaren Krankheiten—nach seiner von der medicinischen Facultät zu Berlin gekrönten Preisschrift bearbeitet von* JACOB LEVIN, Doctor der Medicin und Chirurgie.—*Berlin*, 1839. 8vo, pp. 292.

Comparative History of the Diseases transmissible from Domestic Animals to the Human Race. Founded on a Prize Essay presented to the Faculty of Medicine of Berlin. By JACOB LEVIN.—*Berlin*, 1839.

2. *De la Morve et du Farcin chez l'Homme.* Par M. RAYER. (*Mémoires de l'Académie Roy. de Médecine.*)—*Paris*, 1837. Tome VI. 4to.

On Glanders and Farcy in the Human Subject. By M. RAYER.

"THE deviation of man from the state in which he was originally placed by nature seems to have proved to him a prolific source of diseases From the love of splendour, from the indulgences of luxury, and from his fondness for amusement, he has familiarized himself with a great number of animals which may not originally have been intended for his associates." Such are the words with which the illustrious Jenner com-

mences his Inquiry into the Causes and Effects of the Variolæ Vaccinæ, and taken in connexion with the subject of his investigation they seem to indicate a suspicion of the existence of numerous morbid poisons of animal origin. Such suspicion is very probably well founded; but this field of investigation has attracted few enquirers, and since the publication of Jenner's work the poison of glanders has alone been added to those previously known.

The diseases described by Dr. Levin are—glanders; malignant pustule; aphtha epizootica; cowpox; grease; itch (scabies ferina); and hydrophobia: with regard to each he describes the phenomena of the disease both in the animal in which it originates and in the human subject; its contagiousness and mode of transmission are next considered; its parallelism in the domestic animal and man is then discussed; and finally its prophylaxis and treatment are noticed. This arrangement is methodical, and we shall for the most part adhere to it in analyzing the work.

I. Glanders, (*Rotze.*) The horse, the ass, and the mule are the only animals in which, so far as we know, glanders is spontaneously generated. Indeed it does not seem to have been till recently suspected that any animals but those of this class were capable of contracting the disease, as in most works on veterinary medicine the malady is expressly stated to be peculiar to the solipedes or monodactyles.

Glanders assumes two forms, glanders commonly so called, and farcy. These varieties have been indeed considered as two distinct diseases; but we shall again examine this question, and first consider the symptoms and lesions of the various forms of the disease in the horse, that we may be enabled to compare it with the malady as it occurs in man.

Dr. Levin justly observes that different writers give very discordant accounts of the symptoms and morbid anatomy of glanders, and that it is consequently difficult to frame an unexceptionable description of the disease. His own history of the malady is extremely imperfect, as he appears to consider it as an uniformly chronic disease; his remarks on farcy, as unconnected with what is usually termed glanders, are also very unsatisfactory and incomplete. The truth is that glanders and farcy occur in both the acute and chronic form, thus constituting four varieties of the disease, each of which is very probably capable of producing a corresponding affection in the human subject. It consequently is necessary to advert to the leading characters of each of these varieties of the disease, as much light is thus thrown on the forms it assumes when transmitted to man.

Chronic glanders almost constantly commences with a nasal flux, usually from but one nostril; the discharge, at first aqueous and transparent, gradually assumes a yellow or greenish tinge, becomes purulent, sanguineous, and fetid, and at the same time acquires an adhesive consistence. The Schneiderian membrane is at first frequently preternaturally red, but subsequently becomes pale and flabby, and at length presents ulcers which have been usually compared to chancres; these ulcers extend slowly, and in their progress often produce caries of the subjacent bone. At a variable period from the commencement of the coryza, sometimes but very rarely before its appearance, a submaxillary lymphatic gland corresponding to the affected nostril becomes swollen, hard, and apparently adherent to the jaw. The general health may remain un-

affected for a long period, even for years. Acute glanders may supervene on, or farcy may either precede or accompany the disease; but independently of these complications the animal ultimately becomes feeble, loses appetite and flesh, the respiration gets embarrassed, cough sets in, and death finally occurs amid symptoms resembling those of hectic fever. We have merely sketched the leading features of the disease as sufficient for the object we have in view. It is necessary, however, to describe the morbid appearances more minutely, and in so doing we shall avail ourselves of M. Rayer's memoir, which Dr. Levin does not appear to have consulted.

The Schneiderian membrane presents several alterations probably corresponding to different stages of the disease. Sometimes its surface is occupied by minute white solid granular elevations, containing neither pus nor tubercular matter; their number is very variable, and they may be discrete or grouped together, forming a rough elevated surface. In a more advanced stage they seem to coalesce and form smooth yellowish prominences, which at length become softened in the centre and ulcerate. The ulcers, when the disease has been truly chronic, are of a yellowish gray colour, without any surrounding vascularity; they seldom extend to the cartilage or bone, and their secretion somewhat resembles pus. The mucous membrane itself is yellowish and covered with thick, yellow, ropy mucus. The subjacent bones are sometimes thickened, porous, white, and friable; or may, on the contrary, be very hard but brittle. In the *larynx* and *trachea* ulcers similar to those above described were found by M. Rayer in two out of fifteen cases. In the *lungs* two lesions were constantly observed: 1st, small, hard, whitish cartilaginous granulations scattered on the surface or in the substance of the lung, but never to such an amount as to destroy its crepitation, or cause a portion of it to sink in water; and 2dly, appearances corresponding to the various stages of chronic circumscribed lobular pneumonia. M. Rayer found the submaxillary lymphatic glands enlarged, harder, and less vascular than natural. If, as often occurs, farcy coexists with glanders, the appearances proper to the former disease are of course present.

Acute Glanders is now pretty generally considered with M. Dupuy to be of two kinds, and as each may possibly be the type of a corresponding variety in man, we shall briefly describe their prominent characters.

A. *Pustular Glanders* consists in an acute inflammation of and pustular eruption on the Schneiderian membrane. The affection commences with constitutional disturbance and fever; the pituitary membrane is red, injected, and soon presents pustules with red bases and white summits; there is a sanious discharge from the nostrils, and the submaxillary glands become painful and swollen; in two or three days the pustules ulcerate and the nasal flux becomes more copious and adhesive; the posterior extremities, the sheath and nostrils swell, the respiration becomes extremely embarrassed; circumscribed, rounded tumours, which rapidly soften, frequently form in the skin, which is also occasionally but rarely the seat of a pustular eruption in certain situations, especially about the sheath; debility and marasmus advance rapidly, and death often occurs on or before the eighth or tenth day. The disease may, however, become chronic, and then usually becomes complicated with farcy. On dissection (Rayer, p. 737 et seq.) the *Schneiderian membrane* presents appearances varying with the intensity and duration of the disease. Sometimes it is merely

occupied by solid red papulæ, which more frequently have assumed the form of true pustules, a variable number of which may further have become ulcerated, so that often a considerable extent of the membrane is destroyed. Similar appearances often exist on the *velum* and in the *larynx* and *trachea*. The lungs almost constantly present ecchymosis, and points of circumscribed lobular pneumonia, often in the stage of suppuration. When farcy coexists with pustular glanders (to which variety acute glanders in man most frequently corresponds) the subcutaneous cellular tissue of the abdomen, &c. is infiltrated with yellowish serum; and, as occurs in the human subject, abscesses often exist in the subcutaneous and intermuscular cellular tissue, and lymph, infiltrated with pus, has been found in the vicinity of the joints.

B. *Gangrenous Glanders* commences with the same general symptoms as the preceding variety. The Schneiderian membrane presents a punctated redness, which augments and spreads so that it assumes a livid aspect; there is a sanguineous nasal discharge, and the limbs, nose, and scrotum become œdematous and swollen. After two, or at the utmost three days, the pituitary membrane sloughs in patches, whence ulcers result; the discharge augments and acquires a gangrenous fetor, and death rapidly follows. On dissection the *Schneiderian membrane* is found ecchymosed, thickened, infiltrated with blood, and in various situations, especially on the septum, softened down into a putrid fetid pulp. In the *trachea* petechiæ often exist. *The lungs* are usually ecchymosed on the surface, and in four out of five cases M. Rayer observed hemorrhagic pneumonia, with purulent infiltration or gangrenous softening of the lung.

Chronic Farcy is characterized by subcutaneous tumours of variable shape, often forming a knotted chain in the course of the lymphatic vessels. They are at first painful, soon become hard and chronic, but finally soften and open, giving issue to a whitish, ropy, oily, characteristic discharge, and the resulting ulcers are indisposed to heal. In fact, chronic inflammation of the lymphatic system, subcutaneous abscesses, and cutaneous ulcers, are the prominent phenomena of this disease; which often terminates in, or, on the other hand, may be consequent on glanders. The post-mortem appearances have been scarcely investigated.

Acute Farcy seems also to consist essentially in an inflammation of the lymphatics, but it runs a more rapid course than the preceding variety. Numerous tumours form over the entire surface, and in four or five days soften and ulcerate; at this period also the appearances of acute pustular glanders manifest themselves in the nasal fossæ, and death then rapidly follows. The post-mortem appearances, so far as they are known, have been already mentioned.

Glanders in the Human Subject. When we recollect that perhaps not more than fifty supposed cases of this disease are on record, and that many of them are but imperfectly detailed, it is obvious that we have not yet the materials for constructing a complete history of the malady. Dr. Levin has almost confined himself to giving an abstract of all the recorded cases which he could discover; he has added but six cases to those previously collected by Rayer, only one of which, however, (Wiggin's Amer. Jour. Med. Sc., 1837,) can be admitted as an unexceptionable example of the disease; the remaining cases, one recorded by Mr. Levison, (Lancet, 1830-31, v. xi. p. 805,) and four observed by Tonelli, being at the least open to doubt. On the other hand, four of Rayer's cases have

escaped his notice, as have also several others published subsequently to Rayer's Memoir, to which we shall have occasion presently to allude. We cannot of course give an analysis of the cases, but shall examine the conclusions deducible from them.

Dr. Levin admits, as did Rayer previously, that the human subject may contract glanders by infection or by inoculation, and thence he establishes two varieties of the disease: 1st, That communicated by infection, which commences with general symptoms, runs a course corresponding to acute glanders in the horse, and is uniformly fatal; 2d, That contracted by inoculation, in which local symptoms precede the constitutional disturbance, which is analogous to farcy rather than glanders, and though very fatal is less rapidly and certainly so than the preceding variety. This view seems correct to a certain extent, but requires considerable correction, inasmuch as it leaves out of consideration the form of disease under which the animal whence the disease has been derived labours; a circumstance which there is little doubt exerts an important influence on the communicated malady; and also limits the affection in man to two varieties, whereas it may probably assume in the human subject four distinct forms. We shall consequently, in considering glanders in the human subject, correct and extend Dr. Levin's views by a reference to Rayer's Memoir, in which these distinctions are fully discussed. And thus, instead of admitting but two varieties of the disease depending on the *mode of transmission*, we shall have to examine whether the four forms of the disease to which the horse is liable are capable of producing corresponding affections in man.

Acute Glanders in Man may, according to Rayer, assume, as in the solipedes, the pustular or gangrenous form of the disease; we do not deny that this may ultimately prove to be true; but the facts hitherto known do not seem to justify the assumption.

Acute glanders commences with general or local symptoms, being in the former case probably communicated by general infection, in the latter by inoculation. The mode of invasion, character, and order of succession of the symptoms varies, probably considerably, in different cases, and cannot yet be determined with precision, both because of the fewness of the cases hitherto observed, but more especially because, in most instances, the description of the early symptoms is imperfect, the patients not having come under medical observation until the disease had made some progress, or was even drawing to its termination. There is at first fever of variable character; general uneasiness, rigors, headach, thirst, may all or any of them be present. In some cases the fever seems of a typhoid character from the commencement; in very many instances it assumes all the characters of rheumatic fever, and has been treated as such. (A. Brown, London Med. Gaz., June, 1837, p. 353. Husson, Bull. de l'Acad. Royal. de Méd., 15 No., 1839, p. 119. Berard, meme ouvr., 15 Mars, 1840, p. 601.) In one case the initial symptoms were those of acute angina tonsillaris, (Macdonnell, London Med. Gaz., v. xix. p. 939.) Sometimes, but rarely, the disease commences with gastric symptoms, as nausea, vomiting, or diarrhœa; (Remer, Hufeland's Journ., Bd. 410, p. 58.) Whatever the symptoms of invasion may be, they are in the great majority of cases followed by pains in the limbs and joints, which have very commonly caused the case to be regarded as one of rheumatism. In some instances but a few days elapse before local symptoms su-

pervene. In others, e. g., that recorded by Schilling, (Rust's Magazine, Bd. xi. p. 480,) the patient was affected with catarrhal, rheumatic, and abdominal symptoms, for *upwards of six weeks* before the next order of symptoms set in.

After a variable period, then, hard circumscribed subcutaneous tumours form on the parts that are the seat of pain, in the vicinity of the joints or elsewhere on the extremities, or on the trunk. The skin covering the tumours may fall into gangrene, but they usually suppurate, and when opened generally yield a sanious or bloody discharge. Between the fourth and the sixteenth days a nasal discharge appears, not however uniformly, as it was absent in four of the fifteen cases collected by Rayer. It is right however to observe that, sometimes at least, this symptom is only apparently absent; pressure in some cases causing a discharge from the nose, while in others the dorsal decubitus causes it to run into the mouth. The discharge is usually from both nostrils, is rarely abundant, is yellowish, viscid, and sometimes purulent and streaked with blood. The nose and adjacent parts are occasionally swollen, and in two cases at least gangrene of the nose occurred. At an uncertain period of the malady, at a mean term, perhaps on the twelfth day, a principal and remarkable symptom occurs, which consists in the appearance of a pustular eruption or gangrenous bullæ on the face, trunk, extremities, or genital organs. The pustules appear in succession and usually occupy the face, arms, thighs, and anterior surface of the trunk; they have been compared to the pustules of smallpox, &c., but their appearance is peculiar and specific. The bullæ may be followed by gangrene, varying in extent and depth. Whatever the original type of the fever may have been, it now becomes of a typhoid or adynamic character. The duration of the disease is short; in two thirds of the cases death occurred before the seventeenth day; one only survived on the fifty-ninth day, but in this instance acute glanders supervened on farcy. Every case hitherto observed has proved fatal, with one exception, (Hertneig, Rayer, op. cit., p. 703,) and this case scarcely seems to come within the category of acute glanders.

When acute glanders is contracted by inoculation, from two to eight days elapse before any remarkable symptoms arise. The wound then becomes painful and swollen, and pain and inflammation extend in the direction of the lymphatics, whose course is marked by a knotted cord, or by streaked redness of the skin, the neighbouring lymphatic glands become engaged, and diffuse inflammation of the cellular tissue may occur; in a word, the symptoms resemble those produced by the inoculation of various morbid animal products; sometimes the local symptoms have been mild, and even subsided, before the symptoms above described as those of acute glanders appeared; and it is the supervention of these symptoms on the local derangement which distinguishes the case from other kinds of infected wounds.

The *post-mortem appearances* have, in most cases, been imperfectly examined. The external lesions are sufficiently indicated in the preceding account of the disease. In the cases collected by Rayer, the nasal fossæ were examined only four times, but this deficiency has been since supplied in several cases which may be found in the Bull. de l'Acad. Royale de Méd., for the years 1838-39-40. In all these cases characteristic lesions were found in the nasal fossæ; consisting sometimes in ecchymosis and gangrene, but more frequently in a peculiar pustular

eruption or ulceration, or a granular condition of the Schneiderian membrane. The *larynx* in all the cases in which it was examined exhibited a pustular eruption, or ulcers, or else was inflamed and of a livid colour. Similar appearances have been detected, but not constantly, in the trachea. The *lungs* in a few instances appeared healthy, but usually exhibited lobular pneumonia, pleurisy, pleuro-pneumonia, or great sanguineous congestion.

Chronic Glanders in Man. Dr. Levin does not allude to this form of the disease, which we shall however briefly notice. Rayer could discover but three cases which seemed referrible to the chronic glanders; one published by Mr. Travers, the others by Mr. Hardwicke, (British Annals of Med., No. vii. Feb. 17, 1837, p. 196.) In all these cases symptoms of chronic farcy preceded those of glanders. A fourth has however been since recorded by M. Laugier, (Bull. de l'Acad. etc., 15 Sept. 1839, p. 1037,) which is a more decided and unexceptionable example of the disease. This, like the preceding variety, can probably be communicated both by infection and inoculation; at least in three of the four cases above mentioned no local symptoms of inoculation could be detected. In the case transmitted by inoculation there was inflammation of the lymphatic vessels and glands, and six months subsequently a nasal discharge with ulceration of the Schneiderian membrane appeared. In a second case the symptoms of glanders occurred after the patient had laboured for four months under pains in the joints, inflamed patches on the extremities, and subcutaneous abscesses. In a third case symptoms of farcy existed for fourteen months before the supervention of glanders. In M. Laugier's case, the patient, a negro, was first treated for rheumatism, numerous abscesses formed on the extremities, and under the use of tonics matters improved so much that he was deemed convalescent, but died suddenly in the sixth month of the disease. There had *never been any pain in or discharge from the nose;* but on dissection, the Schneiderian membrane was found thickened, of a dusky red colour, and extensively ulcerated, and the vomer necrosed and perforated. The nasal fossæ were not examined in the other three cases, in one of which ulcers were found in the trachea, larynx, and epiglottis, and small abscesses in the lungs, especially on their surface.

Dr. Elliotson (Med. Chir. Tr. 1835, v. xix., p. 237,) speaks of having cured two cases of chronic glanders in the human subject by the introduction of a dilute solution of creosote into the nostrils, and expresses his intention of publishing the cases, as he "never read of or met with any instance like them in the human subject, former cases having been acute glanders or chronic farcy:" the cases have not however, so far as we know, been yet published; and with reference to the observation just quoted we may remark that Dr. Elliotson, in his previous paper (Op. cit. 1830, vol. xvi.) calls *both* Mr. Travers's cases "*chronic glanders,*" (p. 195); and in p. 199 speaks of the "second case of *chronic glanders.*"

Of the four cases above mentioned one only (Travers's) recovered; but at the expiration of two years and a half the patient despaired of ever regaining his pristine vigour. An ass was inoculated by Mr. Sewell with pus from the ulcers of this patient, and died glandered.

Acute Farcy. Dr. Levin considers it doubtful whether farcy has ever been transmitted to the human subject, inasmuch as when infection has been derived from a farcied horse, the animal may also have laboured

under glanders; but this objection is of no weight, the question being whether man is capable of contracting from the horse, whether glandered or farcied, a disease corresponding in its symptoms and lesions to farcy in the horse. And further, glanders and farcy are capable of mutually propagating each other, and some cases in the human subject which it would be difficult not to recognize as farcy, have been contracted from horses labouring under glanders, (Eck, in Rayer, op. cit., p. 774.)

Acute Farcy can be transmitted by inoculation, and possibly by infection; when resulting from a wound, the initial symptoms are those of inflammation of the lymphatic vessels and glands, and diffuse inflammation of the cellular tissue; and subcutaneous abscesses soon follow. These symptoms are accompanied with fever, rigors, loss of appetite, &c.; so far the case resembles some other morbid inoculations, certain dissection wounds for example, and the progress of the malady may be here arrested, and recovery ensue: if however the system becomes infected, two important sets of symptoms follow: 1st, a gangrenous and pustular eruption, similar to that which occurs in acute glanders; 2dly, numerous soft doughy tumours form on various parts of the surface, remote from the point of inoculation usually on the extremities; these tumours are seldom resolved, but almost constantly suppurate, and sometimes pass into gangrene; large subcutaneous abscesses also sometimes form on the limbs. Pains in the limbs and sometimes in the joints, always precede the formation of these tumours and abscesses; when these symptoms, especially the pustular eruptions, appear, death almost uniformly follows with symptoms of putrid fever, usually between the thirteenth and nineteenth day. When the eruption does not appear, the prognosis is more favorable, but the case may be protracted for months.

The anatomical lesions have been little examined. The nasal fossæ have not been inspected, and we only know that in addition to the subcutaneous and muscular abscesses, appearances have been found in the lungs exactly similar to those described as occurring in acute glanders.

It will be observed that acute farcy has been separated from glanders, because of the absence of a nasal discharge, and of symptoms indicating the existence of a pustular eruption, or ulceration of the Schneiderian membrane. The case already mentioned as recorded by Laugier throws much doubt, however, on the sufficiency of this distinction, as in his patient ulceration existed in the nose, though not indicated by any symptom; and had there not been a post-mortem examination, the case would, in compliance with this distinction, have been regarded as an example of farcy.

Chronic Farcy. It is matter of doubt whether chronic farcy has really yet occurred in man. Rayer has collected twelve cases, some or all of which may possibly be examples of the disease; but he observes that all the cases followed wounds contracted in dissecting or operating on glandered or farcied horses, that the symptoms were very analogous to those which have resulted from certain dissection wounds; and that consequently the inoculated matter may not have communicated a specific contagion. This doubt especially applies to four of the cases in which the symptoms were confined to the arm, of which one of the fingers was wounded. Some days after the injury, phlegmonous erysipelas set in and progressively extended towards the axilla, together with the reddish streaks on the skin, the subcutaneous abscesses, and the knotted cord-

like swelling of the lymphatics, which have followed some dissection wounds. Recovery followed in these cases after several months, and as the test of inoculating a horse or an ass was not applied, we certainly are not justified in regarding them as cases of farcy. The remaining three cases differ from the others in this, that symptoms, such as partial inflammation of the lymphatics and the formation of abscesses, occurred in situations remote from the seat of the primary symptoms. Pains in the joints simulating rheumatism also occurred in some cases; of these three cases but one terminated fatally. We think it more than doubtful whether even these latter cases can be regarded as examples of farcy, notwithstanding that the wounds whence the disease originated were contracted during manipulations on glandered or farcied animals. M. Rayer fully admits that dissection and other wounds have occasionally though not frequently produced similar phenomena; and gives a very remarkable illustrative case which occurred in the person of M. Roux, who having wounded his finger while performing an operation for fistula in ano became affected after fifty-five hours with pain in the finger, depression, and pain in the back of the neck; on the seventh day there was violent fever; the pain extended to the front of the neck and throat, there was difficulty in swallowing, inflammation of the tongue and throat set in, and finally nine fluctuating tumours formed on the extremities. This case alone shows that the supervention of numerous abscesses can by no means be regarded as characteristic of farcy. It is however right to add that the progress of the supposed cases of chronic farcy is much slower than where abscesses of the kind in question have resulted from dissection wounds.

Diagnosis. A. *Acute Glanders.* The foregoing details render any lengthened consideration of this point unnecessary. The nasal discharge, the pustules or ulcers in the nose, the peculiar pustular or gangrenous eruption on the skin, distinguish it from the consequences of dissection and similar wounds, and also from *charbon* and malignant pustule. Rayer states that malignant pustule further differs from acute glanders, in that general symptoms always precede the *pathognomic characters* of acute glanders; whereas characteristic local symptoms always precede the general symptoms in malignant pustule, *even when it is contracted by infection;* a distinction, we may remark, that seems superfluous, and which at all events would not apply to *charbon*, a malady so closely allied to malignant pustule. We are not aware of any means of diagnosticating acute glanders prior to the occurrence of the external characters above mentioned as distinctive; the patients have been supposed to labour under rheumatism, gastric derangement, &c., and the progress of the malady seems alone capable of revealing its real and formidable nature.

B. *Chronic Glanders.* In all the known cases symptoms of glanders supervene on those of farcy, to which we may therefore pass.

C. *Acute Farcy.* The absence of a nasal discharge and of pustules or ulcers in the nose distinguish acute farcy from acute glanders, and the peculiar cutaneous eruption, while it marks its close connexion with that disease, distinguishes it from all others. When this eruption is absent it must be acknowledged that a reference to its exciting cause, or the inoculation of an ass or horse, can alone distinguish it from the consequences of certain dissection and some other wounds.

D. *Chronic Farcy.* We have already seen that in this form of the complaint, only a probable diagnosis can be established; the presumption

as to the nature of the complaint being chiefly based on the determination of its exciting cause. The question could, however, be decided by the inoculation of an ass.

The contagious and infectious properties of glanders, and *the identity of the disease in the solipedes and in the human race*, may be conveniently considered together, as these questions are intimately connected in the relation of cause and effect, and as much repetition would follow from their separate discussion.

The occurrence in the human subject of a peculiar and formidable train of symptoms, not referrible to any recognized disease, naturally excited enquiry as to the origin and nature of the observed phenomena; the antecedents of the malady seemed to connect it with the transmission of glanders or farcy from the horse, and as every subsequent investigation strengthened the probability of this etiology, the transmission of glanders to man is now pretty generally received as a demonstrated fact, and a new disease is thus admitted in modern nosology. Many objections have however been urged against this conclusion, and they deserve to be attentively considered, especially as so doing will afford an opportunity of incidentally noticing perhaps every circumstance of importance connected with the disease, that has not been yet alluded to.

In the first place the transmissibility of the disease from horse to horse has been denied by some, who thence argue, that if it be not communicable between animals of the same species, à fortiori it is not so between animals of different species; the new doctrine too, it is urged, upsets the previous notions respecting the malady, which for ages has been regarded as peculiar to the solipedes. It might be replied that new truths generally explode some received errors; but it is more to the purpose to enquire what are the received doctrines respecting glanders, an enquiry to which it would be difficult to give a satisfactory answer, though recent researches have materially diminished the uncertainty connected with this matter. The fluctuations of opinion that have obtained respecting glanders within a short period are remarkable. Some thirty years since but one kind of the disease was recognized, which was universally deemed contagious and peculiar to the solipedes. The contagiousness of the disease was next questioned by some and completely denied by many. The falsity of this doctrine becoming manifest, two forms of the disease were admitted: 1st, a chronic form, whose contagiousness was denied by many and doubted by others; and, 2dly, an acute form, admitted to be contagious, but transmissible to the solipedes alone. Acute glanders was next said to be transmissible to man. And finally, both chronic and acute glanders are averred to be each both contagious and infectious, and communicable not only to man but to numerous other animals. The balance of evidence certainly seems to favour, we would say to demonstrate, this latter opinion.

The denial of the contagiousness of glanders seems to have in a great measure arisen from overlooking two of the laws of morbid poisons: 1st, that many individuals are unsusceptible of their influence in the absence at least of peculiar predisposing causes; 2dly, that there is a period of inoculation during which the poison lies latent, manifesting no action on the system. Thus M. Bouley (Bull. de l'Acad. de Méd. 31 Oct. 1838,) argued against the contagiousness of glanders, on the grounds that of 105 healthy horses, placed in the same inclosure with forty glan-

dered horses, seven only became infected; but it may be answered, that one in fifteen having contracted the disease, the experiment rather supports than disproves its contagiousness, the immunity of the animals that escape only illustrating the first of the foregoing laws. Again Mr. Youatt, (Lancet, 1831-32, v. xxi. p. 492,) though not denying the contagiousness of glanders, supposes that it cannot be transmitted by contact with the Schneiderian membrane, because Mr. White placed matter from a glandered horse in the nostrils of a sound one for three successive days without communicating the disease. But the experiment proves nothing, as it was not sufficiently prolonged, the fact of there being a period of incubation being overlooked. We need not however dwell longer on this point; the contagiousness of glanders is now established beyond a doubt. It has been communicated from horse to horse, from the glandered matter being swallowed, (Youatt, op. cit.;) by transfusion of the blood, (Coleman, in Travers's Enquiry concerning Constitutional Irritation, &c. 4to, 2d ed. p. 399;) by insertion under the skin, the disease then appearing after a period varying from three days to three months, (Procés Verb. de l'Ecole Vet. de Lyons, May, 1811.) Many have produced the disease by smearing the nostrils of healthy horses with the discharge from a diseased one, the disease in such cases appearing between the seventh and the fortieth day. Renault (Bull. de l'Acad. Roy. de Méd.) has transmitted the disease by injecting the matter of glanders into the veins of horses; and finally, what is important, M. Leblanc has proved, too, not merely the contagiousness of glanders, but its identity with farcy, the matter of each being respectively capable of producing the other form of the disease. The supposition that glanders is peculiar to the solipedes has also been disproved. So far as we know, indeed, they are the only animals in whom it can originate or be spontaneously generated; but M. Renault (Bull. de l'Acad. Roy. de Méd., 31 Dec. 1839, et 15 Fevr. 1840,) has in two instances produced in the sheep by inoculation both the symptoms and characteristic lesions of the disease. M. Hammant, veterinary surgeon to the Pacha of Egypt, is also said to have communicated the disease to a lion and to dogs, (Bull., 15 Aug. 1839.)

It has been also objected that the symptoms of the disease supposed to be glanders in man are not precisely similar to those manifested in the horse, and that consequently the diseases are not identical. How far this objection is valid the reader can judge by contrasting the accounts we have given of the symptoms and lesions in the horse and in man. We may here refer to Dr. Levin's parallel of the disease in the horse and in the human subject, again observing that he does not distinguish the different forms which the disease is capable of assuming: 1st, *a nasal discharge*, constant in the horse, is often absent in man; but we have already shown that this absence is sometimes only apparent, and further, that ulceration may exist in the nose without this symptom being present; 2d, *the lesions in the nasal fossæ*, so constant in the horse, have been detected in the human subject whenever a suitable examination was made; 3d, *tumefaction of the submaxillary glands* has not been observed in man, but perhaps finds its analogue in the tumefaction of other lymphatic glands; 4th, *abscesses in the cellular tissue* are common to the horse and to man; 5th, *the pustular eruption on the skin* so common in man finds no counterpart, Dr. Levin states, in the horse; but this is a

mistake; it sometimes does exist, and has been observed by MM. Dupuy, Leblanc, and Delafond, (Bull. de l'Acad. de Méd., 15 Nov. 1839, p. 131;) 6th, *the lesions in the lungs* are very similar in the man and in the horse. We may add that the symptoms, though thus very similar, are certainly not identical; and it would be indeed strange if they were, for it is well known that a morbid poison will often, even in animals of the same species, produce very dissimilar effects; we need only in illustration hint at the variable effects of scarlatina on the throat and skin, and the multiform phenomena of syphilis in different individuals. Mr. Coleman (Travers, op. cit. p. 400,) denies the transmission of glanders to the human subject, because of the want of identity in the symptoms, and yet in the very same passage he affords abundant refutation of his argument by stating, when speaking of glanders and farcy in the horse and the ass, "The matter of both diseases in quality is the same; we can procure glanders from the farcy matter, and farcy from glandered matter." If, then, one and the same disease produces such varied symptoms in one and the same species of animal, why because of much smaller differences deny the identity of the disease when transmitted to *another* animal species, in which a much wider range of variation might be reasonably expected?

The last objection perhaps that we need notice is, that were glanders transmissible to man, the disease should have been long since and much more frequently observed. To this it has been replied, that the disease passed unnoticed, because its transmissibility was not suspected, and thence the cases when they did occur were wrongly interpreted. That glanders has thus occurred and been overlooked in the human subject is, to say the least, very probable. Thus Rayer cites five cases which there is reason to believe were of this nature, and which have been recorded as examples of rare and unknown forms of disease; it is remarkable that of these five patients, one was a veterinary pupil, another a groom, and a third was in the horse artillery; these cases may be found in Rayer's Memoir, (p. 803 et seq.) Dr. Elliotson too says, "Since the publication of my first paper, upwards of a dozen cases have been communicated to me by medical men, which they are now satisfied were instances of glanders," (Med. Chir. Tr. 1833, v. xviii. p. 201.) Dr. Graves also says, (London Med. Gaz. v. xix. p. 939,) "From the notices which I have been able to collect, it appears that glanders in man is of very frequent occurrence in Ireland:" the particulars of the information thus alluded to are not detailed, which in a matter of such vast interest and importance is to be regretted. The tendency to the cyclical development of particular diseases may be just hinted at as possibly bearing on the subject.

We shall now, without entering into detail, notice the arguments in favour of the existence of glanders in man, and they may be thus briefly stated: 1st, A number of patients have been affected with a peculiar disease previously undescribed, and marked by certain determinate symptoms; 2d, all the persons thus affected have been in intimate relation with glandered horses; 3d, the symptoms during life, and lesions after death, correspond to those of glanders in the horse; and 4th, in several instances, matter from abscesses of the human subject produced, by inoculation, glanders in the horse and ass, (Travers, op. cit. p. 397;

Youatt, Lancet, loc. cit.; Nouat et Boulley, Bull. de l'Acad. &c. Mai, 1839.) We may here observe, that we need not wonder at the transmission of glanders to man having been long overlooked, when we find that Mr. Travers, Mr. Coleman, and Mr. Youatt refused to admit the possibility of the occurrence, after the fact had been demonstrated by the retransmission of the disease from man to the horse or ass.

As to the *mode of transmission* of the disease to the human subject, we need only remark that it certainly can be communicated by inoculation, probably by the simple contact of glandered matter with the unbroken skin; and that there are strong grounds for admitting, provisionally at least, that it can also be communicated by general infection merely, and without any local contact. The period of incubation in the human subject has not been determined. What the susceptibility of the human race to contract the disease may be it is impossible to determine, but comparing the rarity of its occurrence with the great frequency of the opportunities for its transmission, we must suppose that most individuals are but little susceptible of its influence. The predisposing causes are unknown further than this, that the majority of persons affected, especially with acute glanders, were in ill health, or of dissipated habits.

There are at least two cases which tend to show that the disease can be communicated from man to man. One will be found in the Lancet, 11th Feb. 1832. The second is mentioned by Dr. R. Williams, (on Morbid Poisons, vol. ii. p. 372.)

The *prophylactic measures* to be adopted by those placed in circumstances favouring the transmission of the disease are so obvious, that we need not occupy space by detailing them. As to the *treatment*, we find nothing in Dr. Levin's work requiring notice; and we need only say, that in the acute form of the disease, every plan of treatment hitherto adopted has proved inefficacious; while in the chronic variety the disease seemed to run a certain course, uninfluenced by remedial measures.

II. MALIGNANT CARBUNCLE. The German word *milzbrand* is a popular expression corresponding to the French terms *charbon*, *fièvre charbonneuse*, *pustule maligne*, &c. under which names several different gangrenous diseases were long confounded: their signification is now much more precise than formerly, though yet perhaps somewhat lax; as it may be questioned whether the diseases thus denoted are distinct though allied, or are merely various forms of one common malady. Dr. Levin groups the several diseases or forms of disease in question under the common name of *typhus carbuncularis*, and regards them, we think correctly, as but varieties of the same affection.

The *morbus carbuncularis* may originate spontaneously in almost every domestic animal, especially black cattle, sheep, and goats; horses, asses, mules, and dogs frequently suffer; swine are more rarely affected, and even fowl are occasionally attacked. It is certainly capable of being transmitted to man; whether it can originate spontaneously in the human subject is at least doubtful.

Dr. Levin admits the following forms of the disease: 1st, *typhus carbuncularis acutissimus;* and 2d, *typhus carbuncularis acutus*, which latter form admits of the following subdivisions: A, *essential anthrax;*

B, *glossanthrax;* C, *stomanthrax;* D, *angina carbuncularis;* E, *erysipelas epizooticum.*

From a very attentive consideration of what has been written on the subject, we think that the *morbus carbuncularis*, the *maladie charbonneuse* of the French, may occur in three forms: 1st, as a general affection of a low or adynamic type without any local symptoms; 2d, as a general affection on which local symptoms supervene; 3d, as a local disease followed by general symptoms. This simpler arrangement will enable us to analyse Dr. Levin's observations more succinctly than could be done by adhering to his divisions.

The first form of the disease runs so rapid a course, that there is not time for the development of local symptoms, which otherwise we may presume would appear. This form corresponds to the *typhus carb. acutissimus* of Dr. Levin. Its progress is surprisingly rapid, varying from twenty or thirty minutes to a few hours. Sometimes indeed the animal dies almost suddenly, but more usually appears oppressed, restless, tosses the head and staggers, at one moment stands stupefied and motionless, then becomes excited, bellows, and runs about apparently infuriated; at length convulsions occur, the pulsation of the heart ceases, and death supervenes accompanied with bleeding from the mouth, nose, and rectum. After death the abdomen soon swells, and the body passes rapidly into putrefaction. On dissection dark ecchymosed or anthraceous tumours are found in the spleen, pancreas, and liver, and ecchymoses or extravasations of dark blood exist in the brain, on the surface and in the substance of the lungs, in the intestines, the cellular tissue and the muscles.

The second form of the disease, when local symptoms supervene on the general ones, corresponds to Dr. Levin's *Typhus carb. acutus* in one at least of its subdivisions and to the *charbon symptomatique* of Chabert, (Observ. sur les Malad. des Anim. dom., Paris, 1812;) it is more common than the former in black cattle and horses. The animal suddenly gets dispirited and shivers, and after the lapse of from six to thirty-six hours, anthraceous tumours similar to those to be presently described, make their appearance on various parts of the surface; they usually run rapidly into gangrene, and the animal dies in the utmost exhaustion. On dissection, gangrenous tumours or sphacelated patches are found in the principal viscera, as in the former case. The *angina carbuncularis* of Dr. Levin seems to be but a form of this disease, in which the anthraceous tumour forms in the throat or fauces, and occurs more frequently perhaps in swine than in other animals.

The third form of the disease, where the local precede the general symptoms, includes the *essential anthrax* of Dr. Levin, the *charbon essentiel* of M. Chabert, (op. cit.) It begins in the horse as a hard tumour, about the size of a bean, adherent at the base, very painful on pressure, and often presenting a minute opening on the surface; in horned cattle the tumour is larger, less painful, and rarely presents any opening. These tumours may occur on any part of the surface, but more especially whenever there is much lax cellular tissue. As the tumour increases in size, symptoms of inflammatory fever occur; but they rapidly run into gangrene, and when they do so, the fever becomes adynamic, and the animal sinks, usually, or at least often, dying convulsed. The *charbon essentiel* pre-

sents many varieties: sometimes it augments in size with astonishing rapidity; occasionally, it has been said, increasing from the size of a nut to the bulk of a man's head within an hour (?) and rapidly extending throughout the entire cellular tissue, so that the animal becomes stiff, rigid, unable to move, and dies when the tumefaction reaches the throat. The disease again may commence by phlyctenæ or hard kernels on the tongue, which soon run into gangrenous ulcers; this variety is termed *glossanthrax*, and is rapidly fatal: Dr. Levin's *stomanthrax* is merely a variety of *glossanthrax*, which occurs in swine principally. Other varieties of the disease exist on which we need not dwell. Thus in swine more particularly, but sometimes in the cow and sheep, it may commence by white spots which soon become livid and black. On dissection, the blood is found to be very dark and fluid, and sometimes exhibiting a kind of putrescence. Leuret (Archiv. gen. de Méd., t. x., p. 78,) has particularly described the physical and chemical alterations of the blood in this disease, and his statements have been confirmed by M. Delafond, (Bull. de l'Acad. Roy. de Méd., 31 Janv., 1839, p. 329.)

Dr. Levin does not mention the form of the disease called *malignant pustule* as affecting cattle, and we must confess that it is difficult to draw a line of distinction between it and the *charbon essentiel*. The *malignant pustule* (Hartnel d'Arboval, Dict. de Méd. Vet., t. iii. pp. 711-14,) is considered to differ from *charbon*, in never being spontaneous, but always originating from contact with, or inoculation by, some fluid or tissue of an animal labouring under charbon. It commences as a pustule or vesicle seated on a hard base, which extends rapidly, the base at the same time enlarging and becoming surrounded by a circular areola of variable colour, and covered with phlyctenæ full of reddish serum; this areola soon becomes prominent, so that the centre of the tumour, which resembles a hard eschar, seems depressed; the cellular membrane rapidly passes into gangrene, and the parts surrounding the gangrened structures become so remarkably tense and swollen as to give quite a characteristic aspect to the affection. As the disease advances, constitutional symptoms set in, and death soon occurs.

Much has been written, but little is known, respecting the causes of these carbuncular diseases. The affection, so far as we know, is extremely unfrequent in these countries; it seems to be more common in certain districts of France than elsewhere; in Franche-Comté, Burgundy, Lorraine, the Basses-Alpes, and Languedoc, for example, it appears frequently and epidemically. Its origin has been attributed to extreme wet, or on the other hand to extreme drought, or long-continued heat; to imperfect nourishment, or to the prevalence of unwholesome plants (especially the ranunculaceæ?) in the pastures. Whatever the original cause may be, it is demonstrated that the disease when once in existence can be propagated by contagion, as, independent of popular experience, M. Leuret (loc. cit.) has proved by direct experiment, that not only will the matter of the gangrenous tumours, but the blood or portions of the lung or liver of an affected animal, produce the disease if inserted in the cellular tissue of a healthy one.

Malignant Carbuncle and Pustule in the Human Subject. Dr. Levin remarks that the *morbus carbuncularis*, as it affects man, was known long before its exciting cause was suspected, and justly observes that

great confusion exists in its description as given by authors. He simplifies the matter by describing but one of the forms of the disease that occur in man, as his observations relate to the *malignant pustule* alone.

The truth is that the authorities differ extremely as to the distinctions which should be established between the various diseases long confounded under the common appellation of *charbon*. It would be useless to recount the various opinions which have been put forward on this subject, and we shall content ourselves with saying that a careful review of the facts seems to bear out the opinion of MM. Marjolin and Oliver, (Dict. de Méd. 2de ed., 1834, t. vii. p. 272,) who admit two varieties of the disease: 1st, malignant charbon, which we shall call anthrax or carbuncle; and 2dly, malignant pustule.

Malignant Anthrax. This disease is the most formidable of all external tumours; it is almost uniformly preceded by depression and by prostration of strength, which is often not perceived till the patient makes some exertion; nausea, cardialgia, and syncope sometimes exist. The tumour, which may form on any part of the body, almost constantly appears on the face, chest, neck, or upper extremities; it is not very prominent, is very hard and painful, of a dark or livid colour in the centre, and shining red towards the circumference; it is almost always preceded or accompanied by one or more dark pustules or small livid vesicles, which soon open and yield a reddish irritating discharge, which causes intolerable heat and itching; the base of the tumour is surrounded by an inflamed areola, varying in colour and extent according to the intensity of the disease. The centre of the tumour soon becomes a hard, dry, black eschar, or a soft brown slough; burning heat and pain, and a very distressing sense of constriction are invariably felt in the part. Gangrene extends from the centre to the circumference, and often destroys a great extent of the skin, cellular tissue, and even the muscles; intense fever sets in early, the pulse is either small and contracted, or on the contrary tolerably full; the skin is usually dry, but intermittent sweats have been observed. Thirst is often intense, but sometimes is absent; precordial pain and anxiety is almost constantly complained of; and typhoid symptoms soon set in, under which the patient sinks.

The progress of the disease is sometimes astonishingly rapid: Fournier has called it *une tumeur de surprise;* death has occurred within twenty-four, nay even ten, hours. As the occasionally extraordinary rapidity of this disease is not dwelt on in most of the books, we shall notice a case recorded by M. Vidal de Cassis, (Traité de Path. ext., t. i. p. 191.) A man was admitted to the Hôtel Dieu, Marseilles, at 1 p. m., with a small, hard, brown, extremely painful tumour on the neck; at 3 p. m. the neck was so enormously swollen, as to be on a level with the face and thorax; large phlyctenæ seated on hard black bases had formed on the skin, and death occurred at 6 p. m., within five hours after his admission with an apparently insignificant ailment. When the disease affects the face or trunk, the prognosis is much more unfavorable than when it occupies the extremities; but if situated over a large artery or joint, the opening of the vessel or articulation is to be apprehended. Ambrose Paré (Œuvres, liv. xxiii.) saw one of these tumours occupying the abdomen denude the peritoneum to the extent of a hand's breadth.

Post-mortem Appearances. The nature of the local lesions can be

sufficiently understood from the description of the disease. The heart is usually softened, and presents numerous ecchymoses, especially on the internal surface of the cavities, and on the left side; the blood is often liquid and black, particularly in the veins; numerous ecchymoses exist in the lungs, on the external and internal surface of the intestines; and the liver and spleen are gorged with blood and easily broken down.

The prognosis is most unfavorable, death occurring almost constantly and rapidly. Such terror indeed did the disease formerly inspire that the patients were secluded and abandoned without help. (Fournier, Observ. et Expér. sur le Charbon mal., 1768, p. 9.)

Malignant Pustule. This is the form of the disease to which Dr. Levin exclusively refers, and his account of it is neither very clear nor precise. As a description of this disease would occupy much space, and especially as an admirable account of it may be found in so accessible a work as Boyer's Surgery, we shall not notice its symptoms, but merely mention the characters which distinguish it from *malignant charbon* or *anthrax*, a point on which Dr. Levin of course does not touch, as he does not mention this latter affection.

The two forms of disease, which we now seek to discriminate, were long confounded, and it is certainly difficult to draw a strict line of demarcation between them; they can by no means be regarded as essentially distinct, being clearly but varieties of the carbuncular malady; but yet they present differences which forbid us to regard them as identical. The first distinction between them is that in *charbon*, general symptoms precede the local symptoms, the reverse being the case in *malignant pustule*. *Charbon* runs a more rapid course, is attended with more decided and serious adynamic symptoms, and is much more constantly fatal than malignant pustule. The external characters of the two affections also differ. In *malignant pustule* there is around the gangrened part an enormous tumefaction of the cellular tissue of a kind which does not occur in charbon; the appearance of this swelling is said to convey the idea that it is emphysematous; the skin covering it is tense and paler than natural, but it does not crepitate, being usually exceedingly hard, but sometimes soft and elastic. Charbon is also much more painful than malignant pustule. Whether the etiology of these affectious serves further to distinguish them we shall presently examine.

Dr. Levin devotes a chapter to the consideration of *the transmissibility of the carbuncular disease from the lower animals to man*, and observes that we must first determine whether it is transmissible amongst the lower animals themselves. This enquiry, he remarks, is embarrassed by the disease occurring as an epizootic, which allows the facts calculated to establish its infectious and contagious character to be plausibly explained by a reference to the prevailing epidemic influence. The results of experiments on the subject have not been uniform, but since the publication of Leuret's Memoir (Loc. cit.), with which Dr. Levin does not seem to be acquainted, no reasonable doubt can remain that the disease can be propagated by contagion. Whether it is infectious is still an open question.

Dr. Levin considers it as undetermined whether the carbuncular disease can be communicated to the human subject by infection, but refers to no authorities on this head. We have met with but one definite statement bearing on the point. Chaussier (Méthode, etc. suivi d'un Précis sur

la Pust. malig., p. 117,) says an individual contracted charbon from the emanations from the fæces of a patient labouring under gangrenous fever; but the fact is deficient in precision. Whatever may be the state of the case as regards charbon, it seems universally admitted that malignant pustule is never the result of infection. Dr. Levin admits that the disease is transmissible to man by contagion or inoculation; and we shall advert to the chief grounds on which this opinion rests.

The persons most commonly affected with this disease are butchers, tanners, and others whose occupation brings them into contact with animals or animal remains; and the parts of the body which are usually uncovered (as the face, neck, chest, arms, hands, and in certain trades the feet,) are almost exclusively affected; the disease, however, does appear in other situations, but always under such circumstances that the exceptions strengthen the argument: thus a butcher while slaughtering a diseased beast placed his knife between his teeth and the malady appeared in the mouth; the blood of a slaughtered animal trickled down the back of a man who was carrying it and the disease broke out on the parts with which the blood had come in contact. Again, numerous examples are on record of the direct transmission of the disease to the human subject, some of which are so curious, that though familiarly known we may be pardoned for alluding to them. Thus Bertrandi (Oper. Chirur. t. i. p. 100) saw two fatal cases which originated from the contact of a fly that had fed on the body of an animal that died while labouring under charbon; and Monteggia (Instituz. Chir., t. i. p. 197) gives a similar case. The disease has followed the introduction of the arm into the fundament of a horse; but we need not multiply instances, numbers of which are recorded by Chaussier, Fournier, and Thomassin.

Dr. Levin states that Gasparin has observed the disease arise from contact with the recent blood of an affected animal, while the flesh when thoroughly blooded was innocuous; and that, according to Hoffman, the contact is most dangerous while the animal is alive, and the more so the shorter the period that has elapsed since death. An important question is whether the disease can be communicated by eating the flesh of animals affected with it; this point Dr. Levin considers very fully and quotes a number of contradictory authorities. Thus Morand (Oper. de Chir., t. i., p. 236) gives a case of two butchers who killed an over-driven but apparently healthy ox and became affected with charbon, while many persons ate of the flesh with impunity. Again, a butcher, his wife, and assistant, all contracted charbon from an animal labouring under the disease, but upwards of 100 individuals ate of the flesh without sustaining any inconvenience. Guillo de Besançon, Camerarius, and Gerberius say that the flesh of animals that died of the malady has been frequently supplied to soldiers without any bad result. On the other hand Chaussier gives cases in which the most terrible consequences followed the use of such meat. Some have endeavoured to reconcile these contradictory facts by referring the mischief to the meat having been imperfectly cooked, (Hanke, Neue Breslauer Sam. aus dem Gebiet der Heilkunst, 1829, Bd. i., p. 564; Morand, op. cit.) But A. Ammon (Unterricht über den Milzbrand, p. 60,) gives cases where death quickly followed after eating the flesh of animals affected with the disease, though it was thoroughly cooked. Gasparin conjectures that the flesh of animals who die in an

early stage of the malady is innocuous, while it is prejudicial if the disease has existed for a certain period; he also attaches much importance to the flesh being thoroughly blooded, which he thinks calculated to remove its prejudicial qualities. Amidst all this uncertainty Dr. Levin justly remarks that the flesh of animals that die of this disease should not be employed as food.

It is interesting to determine whether charbon is transmissible from one human being to another. As examples of such transmission Dr. Levin quotesa case from Thomassin, (Diss. sur le Charb. malig. etc., p. 31,) where a woman contracted the disease by contact from her husband, and also a case recorded by Helbich, (Diss. Inaug. de Carb. malig., Berol. 1827, p. 16,) in which a child communicated the malady to its mother. He also refers to other cases by Barez (Hufeland's Jour. Dec. 1822, p. 95,) and Hausbrand (Medicin. Vereinszeitung, 1836, No. xxix, p. 145); but does not mention two very conclusive cases given by Fournier (op. cit.) Notwithstanding these and other similar cases some authors, Dr. Levin observes, maintain that the disease is exhausted in man, and cannot be communicated from one human being to another, (Schönlein, Allgemein. und speciel. Path. und Therap., 3te Aufl., bd. i. p. 389.) Some experiments made by inoculation from man, to the human being accidentally and to animals designedly, favour this view, (Basedow, Graefe und Walter's Jour., 1828, p. 591; Mandt, the same, 1825, p. 201;) but we cannot admit that a few negative facts disprove the positive results observed in other cases.

Dr. Levin, in his *comparison of the disease as it occurs in man and the lower animals*, recognizes the general similarity of the symptoms and post-mortem appearances. The chief difference he considers to exist in the same relation of the general and local symptoms. The local symptoms, he says, being in the lower animals preceded by general symptoms, while in man precisely the contrary occurs. . . . . The character of the local symptoms are also, he states, completely different, consisting in the lower animals of a *hard anthraceous tumour*, and in man of a *vesicle or pustule rapidly running into spreading gangrene:* whence, he says, the term *carbunculus* as applied to the human subject should be abandoned, and the name *malignant pustule* alone retained. But we have already stated that Dr. Levin recognizes one form only of the disease in man, namely *malignant pustule*, having overlooked the carbuncular variety (*charbon*) of the malady; while on the other hand he has neglected *malignant pustule* as it occurs in brutes. The foregoing distinctions are therefore inaccurate, as the reader may readily collect from what has been stated when considering the history of the various forms of the disease.

It has been considered by some as an inexplicable amomaly that one and the same deleterious matter should be capable of producing the two forms of disease known as *charbon* and *malignant pustule*. But, as we have already remarked when speaking of glanders and farcy, such a fact is not without a parallel in the history of morbid poisons.

The chapters on the *prophylaxis* and *treatment* of the disease whether in man or in brutes call for no remark. The prophylactic measures will readily suggest themselves; and the account of the treatment of *malignant pustule* in man, to which alone Dr. Levin adverts, is but an imperfect abstract of that recommended by Boyer.

III. Aphtha Epizootica (*Maul-und Klauenseuche*). Dr. Levin observes that, though the transmissibility of this disease to the human subject seems sufficiently proved, the number of well-observed facts are too few to afford materials for a complete description of the malady as it occurs in man. Aphthæ occur symptomatically in many diseases of the lower animals; but the affection now under consideration is an epizootic of which aphthæ form an essential character. It seems analogous to the acute exanthemata, and affects many domestic animals, especially the cow, sheep, horse, and pig. It commences with fever and diminution of all the secretions, save that from the mouth, and often from the nose, there is a discharge, at first thin but subsequently more consistent; the lips and tongue swell, and together with the gums and fauces present numerous minute red points, which soon become white or yellowish vesicles, which break and expose aphthous ulcers, and the greater part of the mucous membrane of the mouth is often thus detached. The epithelium is gradually renewed, and the animal generally recovers in from ten to twenty days. During the course of the disease a vesicular inflammation usually occurs on the foot also.

Sagar (de Aphthis Pecorinis, Vien., 1765, p. 14,) was the first to notice the transmission of this disease to the human subject; he describes the patient as labouring under aphthæ and difficult deglutition. Brosche (die Maul-und Klauenseuche der Kinder, etc., Dresd. 1820, p. 27) and Böhmer (Medicin. Jahrbüch des Oesterreich. Staat., 1827, No. xlviii. p. 226) mention somewhat similar cases; but our best information on the subject is derived from the experiments of Hertwig (Medic. Vereinszeitung, 1834, No. 48, p. 226) who, during the prevalence of this epizootic at Berlin, along with two other physicians drank daily for four consecutive days a quart of milk obtained from cows labouring under the disease. On the second day Hertwig became affected with slight fever, pain in the limbs, headach, heat and dryness in the mouth and pandiculation. These symptoms continued in a mild form for five days, when the entire mucous membrane of the mouth, especially of the tongue, became swollen and covered with minute yellowish vesicles, which enlarging burst and exposed the epithelium softened and of a dark red colour. Chewing, swallowing, or speaking caused burning pain, and there was extreme thirst. Ten days elapsed before the excoriated surfaces healed. Simultaneously with the appearance of the vesicular eruption in the mouth, vesicles which ran a similar course formed on the hands and fingers. The other two physicians were similarly affected. When the aphthæ healed their health was completely restored.

As to the *mode of transmission of this disease*, the experiments just mentioned, together with some previous observations of Sagar to the same effect, show that the disease can be communicated by the ingestion of the milk of animals affected with it. Whether the discharge from the vesicles, or the use of the flesh of animals labouring under the malady, can propagate it, is at least doubtful. We have said enough to enable our readers to judge of the parallelism of the disease in man and the lower animals. And the subject is not of sufficient importance, in the present state of our knowledge at least, to call for a more extended notice.

IV. Cowpox. The next disease of which Dr. Levin treats is the cow-

pox, a subject which has been so very lately and amply noticed in this Review, that we shall not again enter on its consideration on the present occasion; the more especially as Dr. Levin adds nothing to our existing stock of information.

V. THE GREASE (*Mauke*). This is a disease which is most frequently seen in the horse. It occasionally occurs in the ass and mule; and possibly some other animals may be liable to it.

Dr. Levin commences by insisting on the familiar distinction of grease into two kinds,—one merely a local disease, the other a constitutional affection preceded by fever. This distinction, as is well known, is of great importance as connected with the question of the origin of the cowpox. Dr. Levin considers the acute grease, the second of the above varieties of the disease, as analogous to the exanthemata. It commences by fever followed, in from one to three days, by local symptoms; which usually commence in the hind feet, and subsequently extend to the anterior extremities. The heel, which is uniformly the part affected, swells; becomes hot and painful, the hair gets rough and staring, and redness of the skin is occasionally perceptible. After some days a colourless or yellowish, transparent, greasy, ill-smelling ichor exudes in drops or like an exhalation from the surface, and clots the hair together. This secretion, according to some, simply exudes from the pores of the skin, and is never secreted from vesicles or pustules; but Hartnel d'Arboval regards it as originating from the follicles at the roots of the hair. The limpid secretion gradually becomes thick, puriform, extremely fetid, and produces excoriations on the surface which terminate in fissured chaps or pustules. At a more advanced stage the discharge becomes sanious, greenish, or brown, acrid, and insupportably fetid; and the hair and even portions of the skin come away, ulcers form and may extend to the cellular tissue, and cauliflower excrescences are often thrown up from their surface. The entire foot finally becomes a deformed mass covered with ulcers and wart-like granulations, the hoof falls off, and death may at length occur from exhaustion.

It is familiarly known that Jenner attributed the origin of the cowpox to the accidental transmission of the matter of grease to the udder of the cow; that Woodville, Simmons, Pearson, Barthelemy, Houzard, and many others controverted this opinion; which was upheld by Taunton, Lupton, Laffont, and others, both parties appealing to experiments in support of their opinions; and that at length Mr. Loy found that the vaccine disease was communicable to the cow and thence to man, or to man directly without the intervention of the cow, by the inoculation with the *limpid* matter of grease; but that the experiment failed if the secretion had become puriform. The protective power and identity with cowpox of the disease thus called into existence was tested by inoculating the patients experimented on with smallpox. (Bryce, Pract. Observ. on the Inoculation of the Cowpox, &c. 2d Edit., p. 17, and Appendix, No. 1.) Dr. Levin cites a more recent and a very accurately observed fact of the direct transmission of the disease to man; recorded by Hertwig, (Medic. Vereinszeitung, 1834, No. 48; Hufeland's Journ., Sept. 1830, p. 122.) In 1830 the grease was very prevalent at Berlin, and twelve persons occupied about some diseased animals became infected. They suffered

from slight fever during three or four days, and then one or more fingers became painful and swollen, and the swelling extended to the hand and forearm, or even to the axilla. On the fourth or fifth day, hard red elevations appeared on the fingers, which by the ninth or eleventh day became blueish pustules. In three cases there appeared on the back of the hand and arm an eruption of pustules exactly similar to those of the cowpox. We shall adduce another case not noticed by Dr. Levin, which much more strongly supports the doctrine advocated by the illustrious Jenner; as in Hertwig's cases it does not appear that any experiments were performed on other individuals, with matter taken from the pustules of those who contracted the disease from the horse. Husson (Dict. des Sciences Méd., Art. Eaux au Jambes, t. xi., p. 98,) mentions the case of a coachman who, while attending on a horse labouring under grease, became affected with an eruption on the wrist so exactly similar to the vaccine eruption, that Husson was induced to inoculate three children with matter taken from them; perfect vaccine vesicles formed, with matter from which a series of inoculations to many degrees of descent were performed. This case would have been still more satisfactory had the specific nature of the disease been further tested, as in Mr. Loy's cases, by vaccination or a secondary inoculation with smallpox.

VI. Scabies Ferina (*Raüde*). The itch of animals or mange affects almost all the domestic animals, especially the horse, sheep, dog, and cow. We think it needless to occupy space in describing the symptoms of a disease so familiarly known, especially as the fact of its transmissibility to man may be open to some doubt, at least it is rarely so transmitted, and when it is, excites a disease of but little importance.

Dr. Levin quotes cases from Veith, (Handbuch der Veterinärkunde, Bd. ii. p. 674;) Greve, (Archiv für Thierheilk., Bd. ii. p. 46;) Fauvet, (Revue Méd., t. x.;) and Hertwig, (Medicin. Vereinszeit., 1834, No. 48, p. 225;) where persons after contact with mangy animals became affected with some eruptions, always attended with extreme itchiness; the characters of the eruption have been in hardly any instance minutely described, but it certainly differs materially in different cases. Thus in Greve's cases the patients recovered without any treatment in six or eight weeks; while in other cases (Hartnel d'Arboval, op. cit.) it continued a year despite of all treatment. The transmitted disease, Dr. Levin states, seems to differ from the scabies peculiar to the human subject, in affecting all parts of the body indiscriminately, the head and face being often attacked, and no preference shown for the hands or arms. Rayer (Treatise on Diseases of Skin, tr. by Willis, 2d Ed. p. 1203,) mentions a case not noticed by Dr. Levin, in which the transmitted disease, according to the testimony of MM. Dumeril, Geofroy St. Hilaire, and Bosc exactly resembled that proper to the human subject, save that the vesicles were much larger and attended with more intolerable itching and some redness of the skin. In most of the known cases the disease has been contracted from the horse. It has been said to have been communicated by the dog, but this is doubtful, and it has probably never been transmitted by the sheep. As to the mode of transmission it has been uniformly by contact.

VII. HYDROPHOBIA (*Hundswuth*). Dr. Levin observes that, though this disease has been known from very remote antiquity, the efforts of physicians were long so exclusively directed towards discovering some specific for its cure, that the study of the phenomena of the disease in animals was comparatively neglected, and thence he accounts for the defective and contradictory descriptions of the malady which so long passed current. Mr. Meynell's observations, recorded by Fothergill, are perhaps the first of much accuracy that were made on the subject, but for a long period they attracted little attention, the older accounts continuing to be copied by most if not all authors. At length, Blaine in England; and in Germany, Greve, (Erfahrüng und Beobacht. über die Krank der Hausthier. im vergleich. mit den Krank des Mensch;) Waldinger, (Abhand. über die gewöhnlich. Krank der Hunde;) and especially Hertwig, (Beiträge zur näher Kennt. der Wuthkrank)—from the accurate observation of above 300 animals affected with the malady, drew a more faithful picture of the disease than had been previously depicted.

Dr. Levin considers it as in the highest degree probable that the canine race alone can be primarily affected with hydrophobia. Our readers are no doubt aware that it has been hitherto universally held that hydrophobia can also be spontaneously generated in the cat; an opinion which Dr. Levin however regards as almost completely disproved by Froriep, (Casper's Wochenschrift, 1837, No. 13, &c.) who it would appear puts forward strong grounds for believing that the cat always becomes affected in consequence of having been bitten by the dog. Dr. Levin contents himself with making the foregoing statement, but does not enter into any detail respecting the facts and arguments adduced by Froriep in support of this doctrine, and consequently we are not in a predicament to form an opinion as to its validity.

Hydrophobia in the dog assumes, according to Dr. Levin, two distinct forms. The first of which is characterized by augmented activity of the sensorial and locomotive functions, continued and peculiar barking, and a strong disposition to bite. The disease commences with some alteration in the peculiar habits and disposition of the animal, who, as the case may be, is more irritable, more tractable, more lively, or more sluggish than usual; or these several conditions may alternate in one and the same animal. An early symptom consists in an inclination to lick or carry in the mouth various inedible substances, especially such as are cold. The animal after a time gets restless, snaps in the air as if at flies, frequently leaves the house, but usually soon returns, and is obedient and seems attached to his master. According to Blaine, constipation constantly exists. There is usually complete loss of appetite, but the animal seems to suffer from thirst, drinking eagerly, until, as indeed usually occurs, the mouth and tongue become swollen. The eyes are red and become dull, haggard and half closed, the skin of the forehead being also wrinkled, which gives the animal a peculiar aspect. The nose, tongue, or throat now usually become swollen, and the coat becomes rough and staring. According to Hertwig, the mouth is generally very dry; but Blaine has constantly observed a flow of thin saliva. After some time the gait becomes unsteady and staggering, and finally the extremities are paralysed. The tail in this form of the disease is not drawn between the legs, and the head is carried erect, the nose being pointed upwards. A

disposition to bite sooner or later invariably occurs; it is not however permanent but recurs periodically; is directed both against inanimate and animate objects; most especially against the cat, less so towards other animals, and least of all towards man. When the animal bites he does not previously bark or fly at the object of his attack, but approaches in a quiet or even friendly manner, and makes a sudden snap. The *second* form of the disease is distinguished by inactivity and depression, there is no disposition to bite, probably from the lower jaw being paralysed; nor is there any inclination for change of place manifested. The first symptoms are unusual quietness and apparent depression of spirits. The voice is peculiarly altered, as it is also in the foregoing variety, but there is much less disposition to bark. The mouth is open, the lower jaw hangs as if paralysed, and is only raised under the influence of strong excitement; there is a constant flow of slaver from the mouth. The animal either does not drink at all, or does so with difficulty, but manifests no fear of water, as it, on the contrary, willingly immerses the nose in that fluid. The tongue is almost constantly protruded from the mouth. The dissection of dogs that have perished from this disease has hitherto given only negative results.

Dr. Levin, it will be seen, states that dogs *never* manifest any fear of water, and thence, as others have done before him, he thinks that the term hydrophobia should be rejected. Whether dogs never have a fear of water we really cannot pretend to say, but that they *often* have not is mentioned by all modern authors. This fact should be popularly known, as it is vulgarly thought that it can be determined whether a dog labours under this fearful malady, by observing the influence exerted on him by the sight or contact of water.

In the cat, Dr. Levin observes, the disease generally breaks out suddenly; the animal usually springing violently, but often stealing craftily on its victim; the hair is erect, the eyes sparkle, the mouth froths, and plaintive cries are uttered. The animal indulges in the most extraordinary contortions and springs, alternating with convulsions; these attacks occur in paroxysms, one of which ends in death. The cat is, however, liable to a tranquil form of the disease, which is even more formidable, as the symptoms excite little attention.

We think it needless to follow Dr. Levin in his description of this terrible disease as it occurs in the horse, cow, sheep, goat, pig, &c.; as it seems universally admitted that these animals are incapable of transmitting the disease to man or any other animal; that disastrous privilege being limited to the canine race and to the cat.

Hydrophobia in the human subject. Dr. Levin agrees with most writers on this disease, that its symptoms are liable to much modification, and present great variety. He avoids entering into the consideration of these varieties, merely describing the leading features of the disease as it most usually occurs. He first notices the period of incubation, and seems to admit it may last but a few hours, or on the other hand be protracted for many years; in this differing from the almost unanimous opinion of modern authorities. Dr. Elliotson, no doubt, believes that the disease has set in within a few hours after the receipt of the bite (Principles and Prac. of Med., p. 499,) but this is certainly not the received opinion; while the extreme limit is extended by perhaps no modern authority of respec-

tability, beyond the eighteenth or twentieth month. Dr. Levin notices the various accounts that have been given of the progress of the wound, and the condition of the resulting cicatrix, which it is unnecessary to reproduce, as they will be found in all the books. To the period of incubation succeeds the first stage of the actual malady, called by Dr. Levin, in common with several authors, the *melancholy* or *convulsive stage*. There is nothing requiring notice in our author's description of this stage of the disease, except that he describes it as uniformly ushered in by or accompanied with local symptoms in the wound or cicatrix; where as in many cases no such local symptoms occur. His description of the *hydrophobic stage* calls for no remark, except that he does not allude to an alleged peculiarity in the disease when communicated by the cat; in which case it is said that the patient seldom manifests any horror of or difficulty in drinking water. The account of the post-mortem appearances is very imperfect, perhaps designedly so, as it is known that they vary exceedingly in different cases.

Various opinions have obtained as to the *mode of transmission* of hydrophobia. As regards dogs, Mr. Meynell long since maintained that such of them as were supposed to become affected merely by general infection, were in reality bitten; and Dr. Levin informs us that Hertwig never found dogs become rabid when confined in the same locality with those labouring under the disease. With respect to the transmission of the disease to man, Dr. Levin's observations are very imperfect. He merely alludes to and rather negatives the possibility of the disease being communicated by the application of rabid saliva to the unbroken skin, but makes no reference to the cases recorded by Dr. Bardsley and others, in which the disease was apparently, at least, thus transmitted. Contrary to the generally received opinion, he admits that the disease can be communicated to man by other animals than the canine race and the cat, but does not quote the cases calculated to uphold this opinion. Dr. Levin also, without however citing a single case in point, considers it problematical whether the disease may not be communicated from man to man; whereas all experience, as regards the immunity of the attendants on the sufferers, runs the other way. We may observe that such a doctrine should on no account be broached without adducing corroborating *facts*, as it is calculated to revive those fearful prejudices which added fresh horrors to this most terrible of all maladies, prejudices which are not yet indeed completely exploded, as a few months since several individuals were tried and convicted in Ireland for smothering a relative who laboured under hydrophobia (Dublin Med. Press, 1840). Dr. Levin does not allude to the numerous experiments which tend to show that the canine race and the cat are the only animals whose saliva is capable of propagating the disease. Thus Dupuy could never transfer the disease from rabid cows or goats to animals of the same species, though they were readily affected when inoculated from the cat or dog, (Dict. des Scien. Med., Art. Rage. t. 47, p. 46.) As regards the human subject there are many instances of the attendants having been bitten by or otherwise inoculated from a hydrophobic patient, but we are not aware of any case in which the disease was thus transmitted. Dogs also have been repeatedly inoculated from patients labouring under hydrophobia, and in every instance with a negative result, save in the well-known ex-

periment performed by Magendie and Breschet in 1813, (Dict. des Scien. Med. loc. cit.) This experiment, however, stands alone, and is open to the objection that, as hydrophobia was prevalent amongst dogs at the time, the animal may have been previously bitten, or may have spontaneously contracted the disease. We feel however bound to admit, though it may be inconsistent with the doctrine we advocate, that this experiment leaves the matter in some doubt. But even were it to be repeated with a similar result, we would be scarcely justified in thence assuming that the saliva of the hydrophobic human subject could infect man; because the dog, as it spontaneously generates the disease, may be fairly supposed to be more susceptible of contracting it; and assuming Magendie's experiment to afford an undoubted instance of the transmission of the disease from the human subject to the dog, there seems to have been a diminished activity in the contagious power of the transmitted virus, as Magendie (Journ. de Physiol. t. i. p. 42) states that the transmission of the disease was arrested in the third degree of descent, the dogs bitten by the inoculated animal contracting the disease, but not transmitting it to the dogs whom they in their turn bit. This question however obviously calls for further investigation. Another point of much interest has not been touched on by Dr. Levin, the possibility, namely, of hydrophobia being communicated to man by the saliva of a healthy dog; there is, at least, one case on record in which such an event is alleged to have occurred, (Hufeland's Journ. Dec. 1839,) but this is a matter on which our judgment must be suspended. Dr. Levin states on the authority of experiments performed by Hertwig, that hydrophobia can be communicated not only by the saliva, but by the blood. No account is given of these experiments; and we may remark that Dupuytren, Breschet, and Magendie, in vain attempted to communicate the disease by injecting the blood of animals labouring under it into the veins of healthy dogs. We could swell the catalogue of interesting and important points, which are either imperfectly noticed, or passed by in silence by Dr. Levin, but we shall only allude to one more. It might be supposed from Dr. Levin's work, that hydrophobia is sure to follow a neglected bite of a rabid dog,—at least there is no allusion to the fact that a considerable number of those bitten escape the disease; what that proportion is we have not sufficient data to determine, but some approximation might be made by collecting all the recorded cases where the numbers bitten and attacked are respectively specified. The chapters on the prophylaxis and treatment of the disease, whether in man or in the lower animals, contain nothing which calls for notice or remark.

We opened Dr. Levin's work with considerable interest, in the anticipation that it might extend the previously existing account of knowledge respecting the important class of diseases of which it treats; and as we cannot indulge in eulogy, we shall leave our readers to draw their own conclusion as to how far our anticipations were satisfied.

Art. III.

1. *Pharmacopœia Castrensis Ruthenica.* Auctore Jacobo Wylie, Equite Baronetto, s.i.m. Archiatro, Doct. Med. et Chir. &c. Edit. Quart. Jussu Augusti Imperatoris.—*Petropoli*, 1840. 8vo, pp. 820.

2. *Pharmacopoea Danica, regia auctoritate a Collegio sanitatis regio Hafnensi edita.—Hafniæ*, 1840. 8vo, pp. 316.

3. *The Pharmacopœia of the Royal College of Physicians of Edinburgh.* —*Edinburgh*, 1839. 12mo, pp. 217.

4. *A Translation of the Pharmacopœia of the Royal College of Physicians of London*, 1836. *With Notes and Illustrations.* By Richard Phillips, f.r.s.l. & e., &c. *Fourth Edition, with additions.—London*, 1841. 8vo, pp. 456.

5. *New Remedies: the method of preparing and administering them; their effects on the healthy and diseased economy, &c.* By Robley Dunglison, m.d., sec. a.p.s., &c. *Third Edition, with numerous modifications and additions.—Philadelphia*, 1841. 8vo, pp. 541.

6. *The Elements of Materia Medica; comprehending the Natural History, Preparation, Properties, Composition, Effects, and Uses of Medicines. In Two Parts.* By Jonathan Pereira, f.r.s. & l.s. &c.—*London*, 1839-40. Two vols. 8vo, pp. 1500.

The composition of a pharmacopœia is obviously a matter of great national importance, inasmuch as it is the standard by which apothecaries and druggists are regulated in compounding medicines for the cure of diseases. The proper execution of such a work requires abilities of the very highest order; and our royal colleges, to their credit, have generally entrusted this to individuals distinguished for their scientific acquaintance with medicine. It is sometimes a difficult task, however, even for those who are gifted with the clearest insight into the medical profession, to determine whether a particular drug or formula ought to be admitted or excluded from the list, more particularly those that have been recently introduced into practice; for often it will be found that the virtues of new medicines are exaggerated by those who have been connected with their discovery, as a fond parent sees beauties in his own child which none other can discover. We therefore think that a prudent caution should be exercised by our medical authorities in not admitting new agents into the pharmacopœias until they have for some time received the stamp of respectable authority. This has in general been the rule; at the same time it must be acknowledged that undue attachment to some old friends has occasionally exceeded the bounds of an enlightened discretion.

In the construction of a pharmacopœia, a question will very naturally suggest itself to those engaged in the undertaking: What proportion of the agents or formulæ are employed by experienced and enlightened practitioners, by men who are capable of distinguishing between the *post hoc* and the *propter hoc?* A small proportion would be amply sufficient for the general necessities of patients, and there can be no doubt that the really well-informed part of the profession use comparatively few drugs and rarely complicated formulæ. At the same time it is

obvious that if a pharmacopœia were contracted to such narrow limits, many substances would be excluded which have similar or analogous properties to those generally employed, and many formulæ for the same medicine would be omitted, which may be necessary for the more ready combination with others, or to suit the idiosyncrasies, or palate, or predilection of patients. It is therefore, upon the whole, better to have a variety of medicines which have the same or an analogous operation upon the system; but substances that are therapeutically inert, or that are even doubtfully so, should not be admitted. An investigation into the history of materia medica furnishes a lamentable example of the fallacious conclusions of professional men. Where are many of our celebrated specifics, our remedies for scrofula, cancer, phthisis, &c. which once figured so prominently in our medical works? Do not these diseases defy our art with as much pertinacity as they ever did?

If we examine the subject, it will be found that almost all the medicinal agents which have acquired a false celebrity, and which are now consigned to oblivion, have been indebted for their reputation to fortuitous circumstances; and it would be easy to show from the former history of diseases that the medicine employed in the treatment had no influence whatever in effecting the cure, but that the result was entirely owing to the efforts of nature. A physician, for example, employs a certain medicine in a few cases, and finds his patients recover; hence he concludes that the treatment and the cure stand to one another in the relation of cause and effect. Such a conclusion might be just in reference to actions taking place in inanimate matter, as in the domains of mechanics or chemistry; and hence chemical or mathematical physicians, although highly gifted in their peculiar sciences, are as apt to be misled in their medical and therapeutic conclusions as men of ordinary education. The analogy between the laws of dead and living bodies is often very remote: in the latter, vital processes are constantly producing changes, independent of the operation of any external agent; whereas in the former, with some exceptions, these changes are dependent upon the operation of external agents. Thus, if a certain agent is added to the urine after it has been evacuated for some time, it is fair to infer that the change produced is caused by its addition; whereas, if a certain medicine be prescribed to a patient, and the urine is found altered in its quality after its exhibition, it does not necessarily follow that these two circumstances are related to one another as cause and effect; and such a conclusion cannot be fairly drawn, until a uniform series of results have been obtained by a repetition of the experiment. Misapprehensions of this sort are the grand source of the introduction of all kinds of panaceas, and they are very frequently perpetuated by the flaming and exaggerated accounts of some writers and lecturers respecting the curability of all diseases by certain treatment, which produce a very false and injurious impression upon the minds of students, leading them, in their future practice, to bleed, blister, and treat heroically all affections that appear to be violent or intractable. There can be little doubt of the fact, that there are many diseases, among others our wide-spreading epidemics, for which there is no specific treatment, although in all, particular remedies, from the results of a limited number of cases, have been much vaunted. In such instances hygienic and palliative measures are much more successful, and their ap-

plication requires more skill and discrimination in the medical attendant than the administration of particular medicinal agents or formulæ. These principles are too rarely acted up to by practitioners of medicine, who, while they admit their theoretical truth and accuracy, often neglect them in their practice, and they seem to have less engaged the attention of our framers of pharmacopœias than they ought to have done. In those works generally, and especially in these now before us, notwithstanding the great improvements in modern medicine, there are still many substances retained which are either altogether inert, or totally without therapeutic virtues, although in other respects active or even poisonous agents.

Before proceeding to an examination of the different works on our list, there are two preliminary points which ought to be adverted to, as various opinions are held upon these subjects in different countries. The Edinburgh college have followed the example of some of the continental and other colleges, in publishing their pharmacopœia in the vernacular tongue, while many other authorities still employ the Latin language.

It must be quite obvious that the vernacular language of any country will be better understood by the large majority of its practitioners and pharmacopolists than any dead or foreign tongue; and consequently that more accuracy will be secured in the preparation of the various formulæ, officinal or extemporaneous. This is an advantage, which in regard to the English language is very great, owing to the extent of its diffusion beyond Britain and Ireland, to our numerous colonies in the East, West, and South, and also to America. On the other hand it may be urged, that the Latin is or ought to be known by every well-educated practitioner in all countries, and that in this way it becomes an universal language, in which the pharmacopœias of any nation may be understood in all others. At one period this argument was employed to defend the publication in Latin, of all books on medical science; but in modern times, this practice has been almost totally abandoned, as a very impracticable, or at least a very inaccurate method of communicating knowledge. Translations have been found a much more convenient method of transferring the knowledge of one country to another.

It is unquestionably of great importance that medical practitioners should have a very liberal, classical, and scientific education; and the standard for this can scarcely be raised too high, if it be compatible with the means and circumstances of the candidate; but certainly there are no grounds for believing that the publication of a pharmacopœia in Latin would induce a student to learn this language, while there are so many translations to be had, unless there were some other reasons in operation. It is the duty of our teachers to make knowledge as easily procurable as possible, while it belongs to our examining boards to ascertain the classical, scientific, and medical acquirements of those who aspire to degrees in medicine.

We also agree with the Edinburgh college (and of course differ with Sir James Wylie and the London college), in their retention of the old names of many medicinal agents, as being less calculated to mislead those who are not very deeply versed in modern chemistry, and more particularly because our chemical nomenclature has of late been changed and modified so frequently. Besides, mistakes have sometimes occurred in consequence of the slight difference of name or their apparent identity, such as the bichloride of mercury for the chloride, the biniodide of mer-

cury for the iodide, blunders which, it is unnecessary to show, might be as readily committed as they might prove highly dangerous. It is also evident, that though the ancient conventional names were authorized as the language which physicians ought to employ in their prescriptions, yet that this would not in the slightest degree prevent any one from becoming acquainted with the modern chemical or botanical name of any substance or preparation. But while we approve of the retention of the old names, at least until the chemical and botanical nomenclature shall be fixed upon a more permanent basis, we think it an affectation of simplicity to extinguish a scientific name because it is scientific, and substitute in its place one which is very indefinite or vulgar in its meaning. If a name be simple, not unwieldy in length, and be generally understood, it ought not to be changed into another which has a theoretical resemblance to other names in common use, for the very plain reason that it answers all the purposes intended, and its retention obviates all risk of mistake on the part of the practitioner or pharmacopolist.

We think the changes in the Edinburgh Pharmacopœia for the most part not objectionable, especially those where the old names are substituted for those previously last employed, but there are some exceptions. For example, *carbonas ferri precipitatus* is changed into *ferri ox. rubrum*, which might be mistaken for the red oxide of iron prepared by roasting the sulphate of this metal: the sesquioxide would have been a better name, as in the London Pharmacopœia. The term *cornu* is too indefinite, as it might apply to the horn of any animal, whereas it is the horn of the stag that is meant. *Cinchona coronæ* is not a happy change for the *flava* and *rubra* of the other kinds. Why is the adjective (cornararia) of this name not employed? Neither do we admire the alterations adopted in the case of the conserves of the gallic and canine rose, as they appear to be likely to lead to misinterpretation. The old names were much more definite, namely, *conserva rosæ caninæ*, and *conserva rosæ gallicæ*, than their corresponding new names, namely, *cons. rosæ fructus*, and *cons. rosæ*. Why was the old term *cons. cynosbati* not employed for the first, if the botanical name were considered objectionable? *Fæx sacchari* is far from being elegant, and such a name tends to support the opinion that molasses is merely dregs or scum of sugar, which is by no means true. This name appears to have been borrowed from the London Pharmacopœia. If the term *melassus*, adopted by Sir James Wylie, could have pleased the fastidious taste of the two colleges, it would have answered the purpose perfectly as an arbitrary word, and would have conveyed no false meaning like the one that has been adopted.

After these preliminary remarks, we proceed to make a few observations on some of the more leading or prominent substances, and on the manner in which they have been treated of or described in the various works under our present notice.

Hydrocyanic Acid. This acid has attracted great attention of late years, as well on account of its medicinal properties, valuable in some diseases, as from its rapid and fatal operation as a poison. When first introduced into practice, it was believed to possess an extraordinary amount of therapeutic virtue, being considered sedative, anthelmintic, carminative, diuretic, tonic, antispasmodic, &c.; but experience has shown that several of its vaunted virtues have not been genuine. It was

at one period employed very extensively in pulmonary diseases, from the extravagant recommendations made of it by Majendie, Granville, &c., being by many supposed to be almost a specific in phthisis, asthma, hooping-cough, &c., but it is at present rarely prescribed in these affections, except as an elegant placebo to which past repute still attaches some dignity and importance. In affections of the stomach, however, it is sometimes a valuable remedy, particularly in that form of dyspepsia complicated with pain in the epigastrium. The profession are chiefly indebted to Dr. Elliotson for its administration in this form of disease, and for the first clinical illustrations of its efficacy. In vomiting arising from irritability of stomach or other causes, it very frequently succeeds in allaying the inverted action, although many practitioners have been more successful by the employment of creosote. Its external employment has been recommended in neuralgic affections, and in some impetiginous and papular eruptions, but its utility is very questionable if used in a very diluted state; and when applied in considerable doses to an abraded surface, it may be productive of great danger.

A very accurate and sound account of the therapeutic properties of this remedy is contained in Mr. Pereira's Elements. Dr. Dunglison enters very fully into the preparation, toxicological and therapeutic effects of this agent, but "he has not had sufficient reason to place it high in the rank of medicinal agents."

Processes for obtaining Hydrocyanic Acid. There is perhaps no medicinal preparation for which a correct and uniform process is so important as hydrocyanic acid. Fatal accidents have frequently occurred from its great variation in strength. It is not long since we ourselves had an opportunity of ascertaining that a nearly fatal result had occurred by the use of an acid four times stronger than the usual medicinal preparation, which was procured from a highly respectable druggist. The process generally employed for its production, and which is adopted in the London, Edinburgh, Russian, and Danish Pharmacopœias, is the decomposition of ferrocyanide of potassium by sulphuric acids. This is perhaps the best method of preparing it, although, if the operation is not carefully performed, a considerable portion of the acid, owing to its volatility, may escape condensation, and give rise to an uncertainty in its strength. The proportions of the salt and acid are however not the same in the different formulæ; hence the strength of the products must also be various. The proportions in the Edinburgh Pharmacopœia are, ferrocyanide of potassium 3 oz., sulphuric acid 6 fl. oz., water 16 oz., and the resulting product of hydrocyanic acid is 16 fl. oz. Those in the London Pharmacopœia are, ferrocyanide of potassium 2 oz., sulphuric acid $1\frac{1}{2}$ oz., distilled water $1\frac{1}{2}$ pint, and the product is 20 oz. In the Russian Pharmacopœia the quantities are, cyanide of iron and potass 2 oz., sulphuric acid 1 oz.; and the product is 20 oz. of acid, which is stated to contain 2 per cent. of pure acid. This last process is nearly the same as that in the London Pharmacopœia, the difference consisting in the proportions of sulphuric acid, and there certainly appears to be too little acid in the former.

The Danish process is of a similar kind, but alcohol is employed, which renders it more expensive than is necessary; for we believe that hydrocyanic acid, when prepared by sulphuric acid and ferrocyanide of potassium, keeps pretty well without any such addition. This is generally

accounted for by the fact, that some of the sulphuric acid is distilled along with the hydrocyanic acid, and tends to prevent its decomposition. Mr. Phillips states that the addition of a little muriatic acid retards its decomposition.

From the variety of processes, it must be obvious that the strength of the different products cannot be uniform; and though this discrepancy might be obviated to a certain extent by a table of doses, it is to be regretted that the plan of giving these is not adopted in the British Pharmacopœias, although the omission of the London college is well supplied in Mr. Phillips's translation. In the Danish Pharmacopœia there is a posological table of the more potent remedies, and in the Russian Pharmacopœia the doses are given in the general description of the agents.

There is another process for preparing hydrocyanic acid, first proposed, we believe, by Dr. Clarke, and afterwards modified by Mr. Laming, which is occasionally employed by pharmacians, namely, the decomposition of cyanide of potassium by tartaric acid. When a pure cyanide of potassium is used, a very excellent product for practical purposes is the result of this simple method. It contains no doubt a minute portion of bitartrate of potass, but this is not at all injurious for medicinal use. Mr. Laming's addition of a little alcohol is an improvement, in as far as it tends to prevent decomposition.

Cyanide of Potassium. This salt, if it could be readily obtained pure, would, in our opinion, supersede in a great measure the employment of hydrocyanic acid, for its action on the system is exactly the same, and its use would obviate the accidents which too frequently result from the uncertainty in the strength of the former. It is liable, however, to deliquesce when not carefully excluded from the air, and then loses its cyanogen, which of course will render it more or less inert; but there is not much greater difficulty in preserving it than in preventing the volatilization of hydrocyanic acid. Its employment would also be attended with this important advantage, that no mistake could ever occur in prescribing it; for a given weight could not contain more than its atomic proportion of cyanogen, although if spoiled it might contain too little. It is surprising that neither the London nor the Edinburgh Pharmacopœia contains a formula for its preparation, although the former contains one for the bromide of potassium, an agent whose medicinal properties have by no means been ascertained. The Danish College seem also to consider it unworthy of insertion; but the author of the Imperial Pharmacopœia, being more alive to the modern discoveries in medicine, has given it a place, although it is not recommended very strongly. The method employed for its preparation is to calcine the ferrocyanide of potassium in an earthen retort, and after the process is finished, to remove the upper stratum of the saline matter, which is of a white colour and "concrete like glass." We question if this can be pure cyanide of potassium.

Laurel Water. This preparation is generally employed on the continent; and there is a formula for its preparation in the pharmacopœias of both Russia and Denmark, which is nearly the same. It has also been introduced into the Edinburgh Pharmacopœia. We believe it is not liable to decomposition, but it must necessarily be uncertain in the proportions of hydrocyanic acid which it contains. The dose is stated

in the Russian Pharmacopœia to be from 10 to 30 drops, while in that of Denmark the maximum is as high as 60 drops.

Aconitine (*aconitina*). A formula for the preparation of this proximate principle has been admitted into the London Pharmacopœia; but neither the Edinburgh, nor Russian, nor Danish colleges have sanctioned its introduction, a caution which we approve of. It has no doubt been ascertained to be extremely poisonous to animals; but on this account more circumspection ought to be exercised in recommending it, until its therapeutic properties have been well ascertained. We are indebted to Dr. Turnbull for its introduction into practice, and the proofs of its utility have been chiefly collected by him; but we require to have his alleged results confirmed by a more extended clinical experience. In the Russian Pharmacopœia it is shortly described under the name *aconitia*, and is said to have "the form of acicular yellow transparent crystals, which have a very bitter taste, and are soluble in cold water and boiling alcohol." (p. 9.) The following is a part of Mr. Pereira's excellent and full account of this agent:

"As prepared by Mr. Morson, this substance presents the following properties: It is a white, odourless solid, either dull and amorphous or somewhat sparkling, and apparently crystalline. ..... Heated in a tube, aconita readily fuses, and forms a pale amber-coloured liquid; and at a higher temperature decomposes. It is not volatile. Heated on platinum, or over a spirit lamp, it is speedily and entirely dissipated. It is soluble in alcohol, ether, and the acids. From its acid solution it is precipitated by ammonia..... Mr. Morson's aconitina is so powerful that one fiftieth of a grain has endangered the life of an individual. It is the most virulent poison known, not excepting hydrocyanic acid. ..... A minute portion of an ointment, composed of a grain of the alkaloid to two drachms of lard, applied to the eye, causes almost insupportable heat and tingling, and contraction of the pupil. This last effect was shown me by Dr. Turnbull, in some amaurotic cases of several years' standing, and whose pupils underwent no change when the eye was exposed to strong daylight. In very minute doses it has caused heat and tingling upon the surface of the body, and sometimes diuresis; but it cannot be administered internally with safety.....Of the great efficacy of aconitina in neuralgic and rheumatic affections no one can entertain any doubt who has submitted the remedy to trial. The following are Dr. Turnbull's formulæ for using aconitina externally:

"1. *Unguentum Aconitinæ. Aconitine Ointment.* (Aconitina, gr. xvj.; Olive Oil, ʒss.; Lard, ʒj. Mix.) It is employed by friction, with the finger, during several minutes.

"2. *Solutio Aconitinæ. Aconitine Embrocation.* (Aconitine, gr. viij.; Rectified Spirit, ʒij. Dissolve.) Used by friction-sponge (as a sponge tooth-brush). Care must be taken not to employ it where the skin is abraded." (pp. 1338, 1343-4.)

Tartarized Antimony. (Antimonii Potassio-Tartras. *Lond.* Antimonium Tartarisatum. *Ed.* Tartras Stibii et Potassæ. *Russ.* Tartarus Stibiatus. *Dan.*) This salt is universally acknowledged to be a most valuable medicine, and is perhaps more frequently used in febrile and inflammatory diseases than any other in the materia medica. The Edinburgh College have changed their process for making it. Formerly they employed the *crocus*, but now use the sesquioxide of antimony, prepared by decomposing the chloride of this metal by mixing it with a large portion of water. It is similar to the process of the Dublin Pharmacopœia, and is certainly much better calculated to furnish white crystals than the

employment of the crocus is. The method adopted in the Russian Pharmacopœia is very similar to that of the Edinburgh College; but in the Danish the gray oxide of antimony is employed

Tests of Purity. According to the Edinburgh College, tartarized antimony is "entirely soluble in twenty parts of water: solution colourless, and not affected by solution of ferrocyanide of potassium: a solution in forty parts of water is not affected by its own volume of a solution of eight parts of acetate of lead in thirty-two parts of water and fifteen parts of acetic acid." Fifteen parts of water are generally reckoned sufficient to dissolve this salt, as stated by Mr. Phillips. The acetate of lead was originally suggested as a test by M. Henry, who states, in addition, that it is not precipitated by muriate of baryta, neutral oxalate of ammonia, and acidulous nitrate of silver. In the Russian Pharmacopœia it is merely stated to be soluble in fifteen parts of cold and in two of boiling water, that it is decomposed by mineral acids but not by the acetic, and that a polished plate of iron attracts the antimony. The Danish College again consider it impure if not completely soluble in fifteen parts of water, and that no blue colour or precipitate should be produced by the ferrocyanide of potash, which is intended, we presume, to indicate the presence of iron; and that no green colour should result from the addition of the liquor cupri ammoniacalis, which if produced might indicate arsenic.

Nitrate of Silver. This salt is one of the most useful of external applications, particularly in the healing of ulcers, and also in subduing cutaneous inflammation. Mr. Higginbottom first drew the attention of practitioners to its use in arresting phlegmonous inflammation, and in checking the progress of erysipelas; and subsequent experience has proved satisfactorily to many, that its powers are not less remarkable in these diseases than they are in controlling the inflammatory affections of mucous membranes. The employment of the nitrate of silver in these cases, as well as in diseases of the eye, ulcers, cutaneous diseases, &c. is well known; but there are some other affections in which we have found it extremely valuable, although, we are persuaded, this practice is not generally known or acted upon.

a. The analogy between *Gonorrhœa* and purulent ophthalmia might very naturally lead a practitioner to employ nitrate of silver in the cure of the former, if he reasoned at all correctly in the matter; for they are both purulent inflammations of mucous membranes. Many of the agents used as injections in gonorrhœa, such as the sulphate of zinc and copper, acetate of lead, bichloride of mercury, sulphate of alumina, &c. excite more or less inflammatory action in the urethra, and in scrofulous subjects sometimes do more harm than good; but the nitrate of silver, in place of exciting more, generally diminishes inflammation, and on this account may be employed at the very commencement of the disease. We have used this remedy for the last ten or twelve years with much more success than any other injection, and have had no reason to believe that it causes hernia humoralis or any other bad consequence. The proportions we employ are from 1 to 4 grains to an ounce of water, the strength being regulated according to the greater or less inflammation of the parts.

b. The tincture of camphor is so generally reckoned a sovereign

cure for *Chilblains*, that many practitioners would think it heretical to use any other remedy. As far as our experience goes, this agent very often fails in affording relief, and is less effective than the nitrate of silver. A pretty strong solution of this is required, the strength being varied from 10 to 30 grains of the lunar caustic to an ounce of water. Occasionally we have used the proportion of a drachm to the ounce of water, and even more. In one obstinate case, we used a saturated solution (equal parts of nitrate of silver and water), which produced a permanent cure.

c. An ointment made from galls is a favorite remedy for *Hemorrhoids*, but, like camphorated spirit of wine in the cure of chilblains, it often fails. An ointment composed of from 5 to 10 grains of nitrate of silver, very finely pulverized, and an ounce of lard, succeeds in many cases where the hemorrhoids are recent. When hemorrhage arises from internal piles, or from congestion of the lining membrane of the anus, the solution, in the proportion of from 10 to 30 grains to an ounce of water, injected with a syringe, is a preferable method. It ought, however, to be remembered that when the solution is strong, not more than a drachm of it should be thrown into the rectum. In prolapsus ani the efficacy of this solution is not so certain, although we have on several occasions succeeded in curing the patient with it.

The external employment of nitrate of silver is shortly but generally described in the Russian Pharmacopœia, and its employment in checking erysipelas by the formation of a ring with caustic is also noticed as the result of recent experiments. Its employment in chronic blenorrhœa, leucorrhœa, and in excoriated nipples is also mentioned.

Chloride of Lime. This agent, as is well known, is now extensively employed in the bleaching of cotton and other cloth, and its application for this purpose has been of immense value to the manufacturer in expediting his processes. It has of late years also been introduced into medical practice, and has been employed in various diseases as well as for the purpose of destroying contagious and fetid effluvia. As an application to ulcers, a solution of this substance is often of considerable service by inducing, like many other caustic substances, a more healthy action in the parts. It is also stated by several authorities, that it is successful in the cure of scabies and other skin diseases, either in the form of ointment or solution. It has been recommended in ophthalmia, and Mr. Pereira states that he has found a weak solution of the chloride very successful in the purulent ophthalmia of infants. We would prefer the solution of nitrate of silver, as it rarely fails. It forms a very valuable gargle in fetid ulcerations of the gums, mouth, or fauces, whether arising from common causes or from the use of mercury, in the proportion of four to six grains of the chloride to an ounce of water. It has been employed internally in some of the contagious fevers, such as scarlatina and typhus, and experimenters report favorably of its effects in improving the secretions and in destroying their fetor. It ought, we think, to be employed in very small doses, if employed at all in these affections, for it is very irritating in its effects on mucous surfaces. We agree with Mr. Pereira in his opinion respecting the inefficiency of the chlorides to destroy contagious effluvia.

"The power of the chlorides (hypochlorites) to destroy infection or contagion,

and to prevent the propagation of epidemic diseases, is less obviously and satisfactorily ascertained than their capability of destroying odour. Various statements have been made by Labarraque and others (vide Alcock's Essay, p. 55, et seq.) in order to prove the disinfecting power of the chlorides with respect to typhus and other infectious fevers. But, without denying the utility of these agents in destroying bad smells in the sick chamber, and in promoting the recovery of the patient by their influence over the general system, I may observe that I have met with no facts which are satisfactory to my mind as to the chemical powers of the chlorides to destroy the infectious matter of fever. Nor am I convinced by the experiments made by Pariset and his colleagues (*Bullet. des Sciences Méd.* xix, 233) that these medicines are preservative against the plague." (p. 352.)

In the Russian and Danish Pharmacopœias, a formula is given for the chloride which is named calcaria chlorata, chloretum calcis, &c., while in the Edinburgh, it is merely inserted in their list of materia medica; and the London formula is so indefinite that no one would undertake to form it thence. In this country there is no occasion for any formula in our Pharmacopœias, for manufacturers of this article are in general well acquainted with the mode of making it of good quality; but it appears that in Russia it contains too much lime. In the Russian Pharmacopœia a pretty good account is given of its therapeutic properties, and it is also recommended in the form of lotion for fetid perspirations of the feet, pruritus of the vulva, the destruction of lice and fleas, and also to tobacco-smokers for removing the nicotian fetor of their breath, "necnon iis, qui, fumo nicotianæ imbuti spiritum edunt ingratum." This is a valuable hint to the nicotian criminals for preventing discovery.

Gamboge. Gamboge is a purgative which is not often employed uncombined in medical practice, on account of its irritating, drastic, and dangerous qualities, in justification of which reserve we have lately had some lamentable instances of its ill consequences in the case of *Morison's pills.* It may, however, be used quite safely as a component part of purgative pills, if very finely pulverized and in minute proportions, as in the Pil. Cambog. comp. of the London Pharmacopœia. Some apothecaries occasionally use it as a cheap substitute for a portion of the scammony in the composition of the compound colocynth pill of the Edinburgh College. In the Edinburgh Pharmacopœia two kinds of gamboge are noticed, viz. the Siam and the Ceylon, which are nearly identical in chemical composition, although the first is almost the only one known to druggists. The chemical characteristics of this agent are very little known to medical men, as it is only of late years that they have been much investigated; although it is highly important that they be generally understood, for this dangerous purgative is not only employed extensively by empirics, but is also used to colour confectionaries. The following are its chemical characteristics as given by Mr. Pereira:

"Gamboge emulsion becomes transparent and deep red on the addition of potash, forming gambogiate of potash. Digested in alcohol or ether, gamboge yields orange-red tinctures, (solutions of gambogic acid.) The etherial tincture dropped on water yields, on the evaporation of the ether, a thin, bright yellow opaque film or scum (gambogic acid), soluble in caustic potash. The alcoholic tincture dropped into water yields a bright, opaque, yellow emulsion, which becomes clear, deep red, and transparent on the addition of caustic potash. The gambogiate of potash (obtained by any of the above processes) gives, if

the alkali be not in excess, with acids, a yellow precipitate (gambogic acid); with several metallic salts, as acetate of lead, nitrate of silver, &c., yellow precipitates (metallic gambogiates); with sulphate of copper, brown (gambogiate of copper); and with the salts of iron, dark brown (gambogiate of iron)." (p. 1230.)

The test of the Edinburgh College is the tincture of iodine, but it is only capable of detecting its adulteration with starch, which is occasionally contained in common gamboge.

Cantharides. In the Russian Pharmacopœia it is stated that the "lytta vesicatoria abounds in the southern provinces of Russia, but generally inhabits Egypt and the warmer regions of Europe." According to Robiquet cantharides are composed of cantharidin, a green fixed oil, fatty matter, ozmazome, a black matter soluble in water, a yellow matter soluble in ether and alcohol, acetic and uric acids, phosphates of lime and magnesia. The cantharidin is the vesicant principle, crystallizing in micaceous plates, which are fusible, forming a yellow oil. It is extremely active even in minute quantities, and the 1-100th part of a grain is capable of producing vesication upon a tender surface, such as the lip. The expense of this proximate principle has operated as an objection to its general employment as a vesicatory; but Messrs. Smith of Edinburgh have succeeded in obviating to a great extent this drawback. It is stated that their *tela vesicatoria* is formed by spreading an ethereal extract of cantharides upon cambric paper, and we believe it is now very frequently employed in place of the empl. cantharid. It possesses the advantages of being light, elegant, and even attractive in its appearance, and, as far as our experience goes, generally produces complete vesication. We cannot, however, agree with the statement that it never causes strangury. Owing to the thin quality of the paper, it is in our opinion more difficult to keep in proper apposition than the ordinary plaster.

In some diseases a more rapid vesication is required than is produced by blistering plasters. The acet. cantharid. seems to be well adapted for this purpose; it has accordingly been introduced into both the London and Edinburgh Pharmacopœias. The addition of the euphorbium in the latter is certainly no great advantage, for it possesses no superiority over cantharides as a vesicant, if it be even equal to it; and if the proportion of the latter was too small, why not increase it? As it is, however, this preparation ought to be superior in efficacy to that in the London Pharmacopœia; it is not contained in either the Russian or Danish publications.

There are two points connected with the employment of blisters, which it may be useful here to refer to, viz. the methods recommended for preventing strangury, and the plan which ought to be pursued in those habits in which a gangrenous ulceration is likely to occur. Various substances, such as opium, balsam of Peru, camphor, sulphuric or nitric acid, have been used as an addition to blistering plaster, in order to prevent strangury, but we believe with very little effect. In the Russian Pharmacopœia, a piece of muslin moistened with vinegar (nebula lintea) is recommended to be placed upon the plaster, a practice which is occasionally employed in this country, and the utility of which is by no means imaginary, although it sometimes prevents thorough vesication. The practice of dusting powdered flies upon the plaster immediately

before its application is injurious, in so far as the loose particles are apt to get entangled with the skin, and are thereby more liable to be absorbed. We have observed that when the cantharides are coarsely pulverized or imperfectly combined with the fatty bodies, that strangury is more apt to occur; and in proof of which we may quote the fact known to many practitioners, that the unguentum infusi cantharidis of the Edinburgh Pharmacopœia is less liable to occasion painful micturition than the unguentum cantharidis of the same. This, we think, may be accounted for on the principle that the extract of the flies in the one case is minutely and intimately combined with the cerate; while in the other it is less so, and is thereby more readily absorbed.

The *unguentum cantharidum* of the Danish Pharmacopœia appears to be a good formula; in this the cantharidin or vesicant principle is first dissolved in olive oil in place of water, as recommended in other similar works. We should think it little liable to excite strangury, on account of the minute combination of the cantharidin with the fatty matters.

Blisters are disapproved of in several diseases by authors and practitioners where there is a tendency to gangrene. In the Russian Pharmacopœia it is stated that "the use of blisters is injurious in all diseases where there is any fear of gangrene occurring; for example, in the last stage of petechial fevers, malignant synocha, malignant smallpox, and also in dropsy and erysipelas which has a gangrenous tendency." (p. 248.) There can be no doubt that gangrene does occur occasionally in some of these diseases, particularly in malignant measles; but it is equally true that vesicatories are often very advantageous in the treatment, particularly when internal inflammations occur; and on this account they ought not to be proscribed, if there be any method of avoiding the evil consequence.

The remarks of Mr. Pereira on this subject agree with our own experience:

"It is hardly safe to apply blisters to children immediately after exanthematous diseases, sloughing being not an unfrequent result. If it be required to produce in them counter-irritation, the best plan is to dilute the common blistering plaster, by mixing it with three times its weight of soap cerate. I have seen this compound frequently employed, but never observed any unpleasant results from it. Another plan, sometimes adopted, is to apply a common blister for an hour or two only, so that it shall merely produce rubefaction." (p. 1372.)

It is generally found that though rubefaction only be the result after the removal of the plaster at the end of two hours, yet that by the application of a poultice, more or less vesication makes its appearance in a few hours afterwards. There is another vesicant, however, which we have repeatedly used in malignant measles and scarlet fever, viz. the nitrate of silver, and we have not, in any of the instances where it was employed, seen gangrene induced in the resulting blister.

Irish or Carrageen Moss, (Chondrus crispus.) This fucus is found abundantly on the coasts of Ireland; and within the last ten or twelve years has attracted some attention as a substitute for arrow-root, sago, &c. It has, however, been long known in Ireland, and highly esteemed by the peasantry on the western coast as a nutritive article of diet and as a remedy for consumption, diarrhœa, scrofula, and diseases of the kidney. Mr. Pereira gives a short account of its properties and uses, a

portion of which we shall lay before the reader, as no account of this vegetable is to be found in our ordinary works on materia medica.

"In the recent state it is purple-brown or purple-red, becoming greenish and untimely whitish in decay. As met with in commerce it is dry, crisp, mostly yellowish or dirty white, but intermixed with purplish-red portions, inodorous or nearly so, with a mucilaginous taste. It swells up in water. A calcareous meshy crust (consisting of various species of Flustra) is frequently found on the frond. ..... It is usually exhibited in the form of decoction or jelly.

"1. *Decoctum Chondri.* Macerate half an ounce of carrageen in cold water, during ten minutes; then boil in three pints of water, for a quarter of an hour. Strain through linen. Milk may be substituted for water when the decoction is required to be very nutritious. By doubling the quantity of carrageen a mucilage is procured. Sugar, lemon-juice, tincture of orange-peel, or aromatics, as cinnamon or nutmeg, may be employed as flavouring ingredients.

"2. *Gelatina Chondri.* Prepared by concentrating the decoction, or by employing a larger quantity of carrageen." (pp. 563-4.)

The following is M. Beral's formula for preparing what he is pleased to call analeptic or restorative milk, which perhaps may be interesting to some of our dietetic practitioners: Take milk 24 ounces, Irish moss 4 scruples, sugar $\frac{1}{2}$ ounce, canella or cinnamon 1 scruple, macerate the moss in cold water for a few minutes, then shake the water out of it, and boil until the liquid attains the consistence of warm jelly; when cold it has the consistence of cream. In the Danish Pharmacopœia the proportions given for making "Carraghen-Mos-Gelee" are 2 drachms of the moss to 12 ounces of milk. A very good account of this article is given by Dr. Dunglison, and the formulæ of several authors are appended.

Iceland Moss, (Cetraria islandica.) Mr. Pereira's description of this moss is short and good, but, both in his account of it and Irish moss, his dietetical remarks are rather imperfect. It has been estimated that a ton of Iceland moss contains about as much nutritive matter as half a ton of wheat, and Professor Burnet states, in his Medical Botany, that the Saxon government published a report upon this subject a few years ago; in which we are informed that 6 pounds and 11 ounces of lichen meal, boiled with fourteen times its quantity of water, and baked in this state with $39\frac{1}{2}$ pounds of flour, produced $111\frac{1}{2}$ pounds of good household bread. Without this addition, the flour would not have produced more than $78\frac{3}{4}$ pounds of bread, consequently the addition of 6 pounds and 11 ounces of lichen meal occasioned an increase of $32\frac{5}{6}$ of good bread. Bread manufactured in this manner would of course, like sago bread, contain a larger proportion of water in proportion to its weight than common wheaten bread. The method recommended by Mr. Pereira for extracting the latter principle is the one generally practised; but his proportion of the carbonate of potass is too small, viz. one part of this salt to 300 of water. If the carbonate of potass be rendered alkaline by lime, a much less proportion of it will be required; and we have found that four or five parts of this salt treated in this manner are sufficient to extract completely the bitter principle, if maceration for eight or ten days be employed. The lichenous odour of this substance, like that of the Irish moss, is much lessened by maceration in a weak solution of chloride of lime.

The proximate or bitter principle cetrarin has lately been employed in the cure of intermittents, and is described by Dr. Dunglison as one of the new remedies. This author states that it has the form of a white powder, which sometimes presents the appearance of small globules. Its dose is about two grains, and he calculates that its price must be less than that of quina, as M. Herberger obtained 135 grains from a pound of Iceland moss.

Balsam of Copaiva. The first notice of copaiva balsam, as well as of the tree yielding it, was given by Piso in 1648. Mr. Pereira enumerates four species from which it is obtained. It is principally obtained from Para and Maranham, but also from Carthagena, Maracaibo, and Savanilla, and occasionally from Rio Janeiro.

Adulteration. Mr. Pereira remarks that "there is no reason to suppose that balsam of copaiva is adulterated in this country now; though the fact mentioned by Dr. Paris (Pharmacologia, ii. 183, 6th ed.) proves that formerly it was: 'A curious trial took place some time since, between the owners of certain premises that were burnt down, and the Governors of the Sun Fire Office, in consequence of the latter refusing to indemnify the proprietor for his loss, because the fire had been occasioned by his making Balsam of Copaiba.'" (p. 1174.) We beg leave to differ in opinion from the highly respectable author on this point, for we have known balsam of copaiba adulterated, not only with fixed oils, such as rape oil, but also with Venice turpentine, although the adulteration is not so frequent as it once was. The Edinburgh College give the following as tests of its purity:

"Transparent: free of turpentine odour when heated: soluble in two parts of alcohol: it dissolves a fourth of its weight of carbonate of magnesia, with the aid of a gentle heat, and continues translucent." (p. 16.)

Its solubility in alcohol would detect the presence of almost all the ordinary fixed oils; but we are satisfied that a certain proportion of castor oil might be present, which being soluble in the alcohol, might escape detection by the carbonate of magnesia. The evaporation of a drop of the suspected balsam upon a piece of unsized paper, as recommended by Mr. Pereira and as occasionally practised, ought to have been added. If the balsam be pure a resinous spot is left; but if it be adulterated with a fixed oil, it is greasy and soft. The action of sulphuric acid upon it is also worthy of trial in doubtful cases. When three drops of pure balsam and one of sulphuric acid are well mixed together, they unite into a plastic reddish mass; while if it be mixed with castor oil to any considerable extent the mixture remains fluid. Venice or other species of turpentine are the most difficult of detection, and the mode recommended by the Edinburgh College is the only one that has hitherto been practised or recommended; but it is by no means to be depended on, for the odour of the balsam is so strong and it is volatilized so readily, that it completely conceals the odour of the former, unless it be present in large proportion.

Mr. Pereira, in describing its physiological operation, refers to the eruption occasioned by its internal employment, a circumstance which has attracted some attention of late years. He says that "not unfrequently it gives rise to an eruption, usually of a scarlet colour, referrible

to either urticaria or erythema, though some describe it as being miliary. Vesicular eruptions are also spoken of, but I have never seen them. Mr. Judd has depicted two eruptions caused by the balsam: one he calls small puniceous patch eruption, the other was a papular eruption. Rheumatism has also been ascribed to the use of the balsam (Br. and For. Med. Rev. vol. viii. p. 280; and Lancet, vol. ii. for 1837-8, p. 826.") (p. 1176.) The precise character of this eruption has not hitherto been determined, and we have no doubt from the discrepancy which exists respecting it, that cutaneous affections which were owing to other causes have in many instances been confounded with it. This subject is, therefore, worthy of further investigation by some competent person.

Administration. There are two essential points connected with the exhibition of copaiva, viz. 1, the most efficacious formula; and 2, the one which is most easily taken, and which produces the least inconvenience to the patient afterwards, for we know no medicine which so universally excites disgust when a perseverance in its use is required. In our experience the most efficacious formula is an emulsion made with gum arabic water, and a few drops of aq. potassæ, to which may be added a little sugar and spirit of nitrous ether. Mr. Pereira gives very full instructions on this head, to which we refer our readers. The gelatine capsules of copaiva have obviated one of the great objections to its continuous employment, for they have neither the odour nor taste of this balsam. "These capsules were the invention of a Frenchman of the name of Mothe. They are now manufactured in London by Mr. Wildenow, whose agent informs me that the capsules are made of a compound of gelatine, gum, and sugar. In very hot weather some difficulty is experienced in making them. Desfontenelles has described a method of making the capsules. It consists in coating the distended and greased swimming bladder of the tench (or other small fish) with gelatine, and afterwards withdrawing the air and the membranous mould. Manufacturers, however, must have some cheaper and more readily procurable mould than a fish's swimming bladder. Gelatinous capsules of cubebs, containing the oil of cubebs, are also prepared by Mr. Wildenow." (pp. 1179-80.) The same author remarks that the resin is the least active part of the balsam, and he prefers the oil, in the dose of from ten to twenty drops, which may be gradually increased. The Edinburgh College have introduced a formula for its preparation into their Pharmacopœia, but give no test for its purity; and perhaps there is none known that can be depended on.

Creosote. We shall assume that the general qualities and administration of this medicine are pretty well known, and will therefore only allude to one or two points connected with its therapeutic agency. As an internal remedy we consider creosote chiefly valuable for its powers in checking vomiting, arising from irritability or derangement of the digestive organs, and we have tried it so extensively as completely to satisfy ourselves upon this point. It would be an exaggeration to say that it scarcely ever fails; but certainly it succeeds more frequently than any other agent we have tried in such cases. We agree with Mr. Pereira in thinking that it frequently fails where the vomiting depends upon organic disease, but even in some of these cases, a temporary relief

is obtained from it. There are some essential oils which are also very efficacious in checking vomiting, such as the oil of cloves, which we have often employed, particularly in affections of the digestive apparatus occurring in children, who could not be induced to swallow creosote. The formula we employed is 8 drops oil of cloves, 2 drops liq. potass., 30 drops of sp. æth. nitros., 2 ounces syrup, rubbed up together in a mortar. Occasionally the addition of a little magnesia, laudanum, or tincture of hyoscyamus is useful, if there be acidity, diarrhœa, or pain from flatulency. Dr. Elliotson and others have recommended creosote in the treatment of diabetes. We have tried it both in the saccharine and insipid form of the disease, and, as far as our experience extends, with very little effect in altering either the quantity or quality of the urinary secretion. As an agent for checking hemorrhage it is worthy of a more extensive trial than it appears to have received from the profession. In such cases it appears to act principally by coagulating the albumen of the blood, and thus forming a solid barrier to its impetus, nearly on the same principle as nitrate of silver acts, by the formation of a slough.

Creosote (*Kreosotum*) does not seem to be much used in Denmark, as it is very briefly noticed in the Pharmacopœia of that country. A pretty good article on this agent is, however, to be found in that of Russia, accompanied with copious details of the process for its preparation. In this work it is recommended as an application to chilblains, either recent or ulcerated, in the form of liniment made with olive oil, in the proportion of 5 to 10 drops to an ounce of oil. A dilute solution is stated to be of service in menorrhagia, when injected into the vagina. In Dr. Dunglison's work a very complete and admirable account is given of the properties and therapeutic agency of this article.

Croton Oil. This oil is now well known as a powerful cathartic in cases of obstinate constipation, in apoplexy, in diseases accompanied with a comatose or delirious state, tetanus, mania, &c., its small dose, independent of other advantages, rendering it comparatively easy of administration to persons who are either unable or unwilling to swallow bulky medicines. In cases of constipation accompanied with vomiting, its combination with opium is often advantageous, exhibited in the form of a pill, viz. two or three drops of croton oil and one grain of opium. The opium tends to relieve the vomiting, but does not prevent the purgative operation of the oil, which generally takes place in a few hours after the dose is swallowed. We have found the oil a valuable addition to the compound colocynth pill as a laxative in very obstinate conditions of the bowels, in the proportion of one eighth of a drop to each pill. As an external agent, however, for producing a rubefacient or pustular effect, it has not come into general employment, as its price is high and its operation not superior to that of many other agents. In the Russian Pharmacopœia there is an excellent article on croton oil, and a curious and agreeable mode of exciting purgation is stated to be practised in Asia and Oriental India, viz. to macerate an orange or lemon in the oil for a month and then to apply it to the nostrils, "ut ex olfactu ventris exoneratio insequatur . . . quod tamen (the author adds,) incredibile est auditu."

Test of Purity. In the Russian Pharmacopœia it is stated to be "often adulterated with ol. ricini, ol jatrophæ curcas, ol. jatrophæ multifidæ, or any other expressed oil; nay it is made factitiously from the resin of jalap dissolved in Canada balsam, which, however, may be detected by the aid of alcohol extracting the very acrid resin. In France the oil of euphorbia lathyrus is substituted for croton oil, or is used for its adulteration." (p. 136.)

In the Edinburgh Pharmacopœia the following tests are given:

"When agitated with its own volume of pure alcohol and gently heated, it separates on standing, without having undergone any apparent diminution." (p. 17.)

It seems implied in the above directions, if we understand them correctly, that the oil is not permanently soluble in pure alcohol, for it separates by the aid of heat, without any diminution. Dr. Nimmo many years ago proposed its partial solubility in alcohol as a test of its purity; and Mr. Pereira states that it is soluble in this fluid, the same fact being also mentioned by Berzelius. Dr. Dunglison mentions that it is almost wholly soluble in absolute alcohol.

Cubebs. Mr. Pereira is of opinion that this pepper was not known to the ancient Greeks, although this has been repeatedly stated by authors. He mentions, however, its use in England 500 years ago, "for in 1305 Edward I. granted to the corporation of London the power of levying a toll of one farthing a pound on this article in its passage over London Bridge."

Mr. Pereira prefers the essential oil as the best and most convenient preparation. The justness of this preference we think doubtful, for the resinous principle possesses also very active properties. On this account we have always employed the pulverized berries, although rather a bulky medicine. In the state of powder it is liable to be adulterated, chiefly with other and cheaper kinds of pepper. We have known it mixed with pulverized pimento, which may be detected by inspection with an ordinary magnifier; the particles of pimento being of a light brown, when compared with the blackish hue of the cubebs. Cubebs, when in the pulverized state, ought to be kept in a well-stopped phial, as its essential oil is very volatile, and when kept in paper, the latter absorbs a large proportion of it.

Ergot. Without entering into the controversy regarding the nature of ergot, we may state that it has been almost proved that it is a parasitical fungus. Mr. Pereira gives a minute account of its appearance and structure, accompanied with some woodcuts. The following observations of Mr. Pereira, which our own experience enables us to corroborate, are important:

"The ergot of rye is fed on by a little acarus, which I have called A. Ergotæ. It is about one fourth the size of the cheese-mite. This animal destroys the interior of the ergot, and leaves the grain as a mere shell. It produces much powdery excrementitious matter (Quekett). In four months, 7½ ounces of this fæcal matter of the acarus were formed in seven pounds of ergot. I have some ergot which has been kept for three years in stoppered glass vessels without being attacked by the acarus, and it has all the characteristics of good ergot. It is advisable, however, not to use ergot which has been kept for more than two years." (p. 599.)

When the decomposition of the ergot occurs, it is generally owing to the presence of moisture or imperfect desiccation; for we have seen ergot kept for several years, in a perfectly entire state, when it had been previously thoroughly dried. It should not, however, be kept in the pulverized state, as it is thus rendered more liable to absorb moisture from the atmosphere. No precise chemical means are known for testing its activity, although Mr. Pereira enumerates the effects of several reagents. We may state, however, from our own experience, that if the grains have their usual form, blackish-brown colour, peculiar farinaceo-acrid but scarcely definable taste, pinkish or pinkish-white fracture, accompanied with a peculiar odour, easily recognized, but not capable of accurate description, we have rarely known the medicine to fail in producing effects on the parturient uterus. The analysis of this agent has not added anything important to our therapeutic formulæ. Mr. Pereira states that the specific gvavity of ergot is somewhat greater than that of water; while Mr. Wright (Edin. Med. and Surg. Journ.) says that it is lighter than this fluid, and even assigns this character as one of the signs of its activity. We tried six entire grains; four of them floated in water, and two sank to the bottom, but on dividing those that floated, one half of each grain sank to the bottom while the other floated. It is obvious from this that the specific gravity is not a test of the quality of this subtance. There is one question connected with the use of ergot, which it is of vital importance to determine, and about which authors differ materially; viz., whether it proves fatal to the child when exhibited during labour.

Dr. Dunglison gives a very full and excellent account of the properties and powers of ergot, but he combats the opinions entertained by many that it is injurious to the fœtus. When this agent is employed judiciously and in the proper dose we believe that injurious results are rare; but on the other hand, when given in large doses, at improper stages of the labour, during the existence of formidable impediments or during first labours that are lingering, the danger of inducing the death of the child is very considerable. Various hypotheses have been formed by authors to account for its modus operandi in killing the child. Some have supposed that it does so by the violent continuous action of the uterus causing an obstruction of the circulation of the fœtus. This conjecture is by no means improbable, and is supported by the physiology of natural labour. In the natural process, after the occurrence of one uterine pain, there is an interval of repose before the accession of another; and any partial injury from pressure during one of these efforts is recovered from, by the fœtus, during the intervals of ease. But in labour accelerated by the ergot of rye, the uterine pains have generally no interval, but are positively continuous; and if the child be not expelled before the expiry of several hours, it is fair to infer that the constant pressure must have a tendency to cause asphyxia. As an additional proof that this explanation is correct, we have repeatedly observed, when the pains were violent and continuous, after the exhibition of ergot, or when the delivery was protracted much beyond the usual period, that the child was languid or did not respire for some minutes, which symptoms were accompanied with lividity of the lips and laborious breathing. The narcotic influence of the ergot has also been brought

forward to account for the asphyxia of the fœtus; but if it operated in this manner, the child would labour under the injurious effects of the poison for some time after birth, which is by no means the case, for as soon as the function of respiration is completely established, it appears as lively as other new-born infants. Another hypothesis has been advanced, viz., the detachment of the placenta previous to the birth of the child; but if this opinion were tenable, the discharge of blood which usually occurs on the detachment of the placenta ought to take place immediately after the expulsion of the child, which is not agreeable to experience.

Besides the ordinary obstetrical rules which are laid down by authors for the exhibition of ergot; there are two points connected with its administration, which are not alluded to by Mr. Pereira, and which have not been prominently brought forward by any writer on the subject; viz., the dose that should not in ordinary cases be exceeded, and the more frequent death of the fœtus after its exhibition in first labours. The quantity that we have from experience, and we have used it frequently, found safe, is from twenty to twenty-five grains, given in the form of infusion, the pulverized ergot being also swallowed. On theoretical grounds a person might be apt to imagine that if ergot of rye were harmless in second or subsequent labours, it could not be injurious in the first. If, however, we attend to the fact, that the large majority of first labours are tedious; and that the ergot has by no means the same influence over them as it has in other cases, we shall at once see that the fœtus must be much longer under the continuous compression of the uterus in the one case than in the other. So much are we convinced of the truth of what has now been stated, that though we exhibit ergot frequently when the os uteri is sufficiently dilated, and the head well advanced, we have not for several years prescribed it in *a first case* under the same circumstances. Mr. Pereira shortly alludes to the ergot as occasionally causing rupture of the uterus, especially if there be any mechanical obstruction to the delivery, such as distortion; and without questioning the fact, that such instances may have occurred, we are satisfied that this agent has in general very little if any influence in producing this accident; for in the large majority of recorded cases of rupture it had not been exhibited. We have ourselves had opportunities of witnessing a few cases of this nature, and in none of them was this agent exhibited; indeed the cause in all of them was not ascertained; but in all, the labour was tedious, although the pains were by no means energetic. Mr. Pereira is satisfied by the evidence recorded on this point that the ergot is capable of exciting abortion or premature labour. The majority of recent writers on this subject are of this opinion, and we are inclined to agree with them; at the same time we think that farther experiments are required to determine this matter conclusively.

We have no room for any remarks upon the use of ergot in the expulsion of the placenta, in hemorrhage from the uterus both before and after delivery, in the expulsion of clots, hydatids, and polypi from the womb; in general hemorrhages, in leucorrhœa, amenorrhœa &c.; but there is ample and good instructions on these and other points to be found in the works of Pereira and Dunglison. Ergot of rye has a place in all the works under our present notice, at least in their lists of Materia Medica; and its character is referred by all but the Danish

College to a species of fungus: this college terms it *Semina Monstrosa*, which is undoubtedly a very convenient method of solving a dispute about its classification.

Saccharated Carbonate of Iron, (Carbonas ferri saccharatum. *Ed.*) There can be no doubt of the fact that the precipitated carbonate of iron, or what should properly be called the sexquioxide of iron, is very inferior in medicinal operation to the protocarbonate of the same metal. The protocarbonate of iron, however, when exposed to the air, speedily parts with its carbonic acid, and absorbs an additional portion of oxygen; it is therefore of considerable importance in a therapeutic point of view to prevent this change. It has been long known that saccharine and some other bodies, when united with the proto-salts of iron, retard their peroxidation, and various preparations of the protocarbonate have been devised to effect this object—which, however, they do only partially—such as the pil. ferri c., mixt. ferri c. of several of our pharmacopœias. We believe that there is not enough of sugar in either of these preparations to prevent decomposition, and the process recommended by Dr. Clarke ten years ago is greatly superior. He directs the soft precipitate to be mixed with sugar and aromatic powder, so as to form an electuary. The preparation newly introduced into the Edinburgh Pharmacopœia under the above name is calculated, we think, to effect the object referred to better than any previous process, in so much as the mixture is dried, and thereby rendered less liable to absorb oxygen. A similar preparation is to be found in the Danish Pharmacopœia, which is called *Ferrum subcarbonicum saccharatum*; but the proportions of the sulphate of iron and subcarbonate of soda have not been given. Sir James Wylie adopts the plan of washing the precipitate with honeyed water, in order to prevent the action of the air, and afterwards forms it into a kind of dense extract with honey, by the aid of the water-bath. No formula of this kind is in the London Pharmacopœia. The test of Purity of the Edinburgh College, viz., its grayish-green colour, and its solubility in muriatic acid, with brisk effervescence, will easily distinguish it from the sexquioxide of iron, which possesses neither of these properties.

Iodide of Iron, (Iodidum Ferri.) This preparation was introduced into practice by Dr. A. T. Thomson, and is now pretty frequently prescribed, and has been admitted into the London, Edinburgh, Russian, and other Pharmacopœias. This shows that it has got more or less of the confidence of the profession. We think it a good preparation; but we must add that its virtues have not been recorded to an extent sufficient to prove its superiority to other preparations of iodine, or to establish the peculiar advantages which result from the simultaneous action of the iodine and iron. Sir James Wylie states that it may be employed externally in the form of bath in scrofulous affections; half an ounce to an ounce being dissolved in water for this purpose.

In the Edinburgh Pharmacopœia iron wire is employed in making this preparation, which is much more pure than iron filings, the article recommended in the London and Russian Pharmacopœias; much more is directed than can be dissolved in the first of these works, but this is no great objection, as it is cheap and ensures its more ready solution, and the more complete saturation of the iodine.

Test of Purity. The Edinburgh College state that it is entirely soluble in water or nearly so; forming a greenish solution. Would this test distinguish it from the proto-salts of iron?—We think not. That of the London College is better, although not very complete, but the subject is still open for farther investigation. The preparation and therapeutic properties of this agent are very fully detailed by Dunglison.

Hydrated Sesquioxide of Iron, (Ferrugo). Recent experiments have established the discovery of MM. Bunsen and Berthold, that the hydrated peroxide of iron proves, in many instances, an antidote to the poisonous effects of arsenious acid, particularly when exhibited frequently and in large doses. A chemical union takes place between them, and in this manner an insoluble arsenite of iron having little activity is the result. The dry sesquioxide of iron having been found much less efficacious than the hydrated form, it is therefore of essential importance that this should be procured at a moment's warning. We have known instances of poisoning where this preparation could not be procured, and where the mode of preparing it was totally unknown to the practitioner, so that the ordinary sesquioxide of iron required to be substituted for it. We are therefore gratified to see a process for its preparation, both in the Edinburgh and Russian Pharmacopœias. In the last named work it is recommended, when intended to be used as an antidote to arsenic, to be preserved, of a jelly-like consistence, in close vessels, the "Hydras Sesquioxydi Ferri, ut antidotum acidi arsenicosi adhibendus, humidus et nequaquam siccatus, gelatinæ quasi speciem referens, in vasis probe clausis servetur." (p. 529.) As this is a very important formula, and one which ought to be known to every practitioner, we shall quote the direction for its preparation by the Edinburgh College:

"Take of Sulphate of Iron, four ounces;
Sulphuric Acid (commercial) three fluidrachms and a half;
Nitric Acid (D. 1380), nine fluidrachms;
Stronger Aqua Ammoniæ three fluidounces and a half;
Water, two pints;

Dissolve the sulphate in the water, add the sulphuric acid, and boil the solution; add then the nitric acid in small portions, boiling the liquid for a minute or two after each addition, until it acquires a yellowish-brown colour and yields a precipitate of the same colour with ammonia. Filter; allow the liquid to cool; and add in a full stream the aqua ammoniæ, stirring the mixture briskly. Collect the precipitate on a calico filter; wash it with water till the washings cease to precipitate with nitrate of baryta; squeeze out the water as much as possible; and dry the precipitate at a temperature not exceeding 180°. When this preparation is kept as an antidote for poisoning with arsenic, it is preferable to preserve it in the moist state, after being simply squeezed." (p. 101.)

Iodide of Mercury, (Hydrargyri iodidum.) This preparation is commonly called the proto-iodide of mercury to distinguish it from the deuto-iodide of the same metal. Their appearance and properties are very different; yet they have sometimes been confounded, or at least considered so nearly resembling one another in physiological qualities as to be prescribed in the same doses. For example, Dr. A. T. Thomson, in his Materia Medica (vol. i. p. 342), prescribes them in the same dose, and states that "for external application an ointment is prepared with half a drachm of either of the iodides and one ounce of lard." Dr. Dunglison, however, has given correct information upon this point, and

he states that the deuto-iodide resembles corrosive sublimate, while the proto-iodide resembles calomel. He also quotes Rayer, who considers the deuto-iodide more active than corrosive sublimate. The iodide is certainly an irritant, when exhibited in large doses, and proves poisonous to animals, but it may be exhibited, to the extent of two or three grains, when quite free from the biniodide, without causing any particular excitement in the system, except sometimes a laxative effect. It has been recommended strongly by Lugol in the form of ointment to scrofulous swellings, in the proportion of twenty to forty grains to an ounce of lard, and is occasionally of use, but like all the other substances which are applied by friction to swollen glands, it often does as much harm as good, by exciting a tendency to suppuration. As an application to ulcers, however, and some cutaneous diseases, it is sometimes beneficial. It acts as a mild mercurial when given internally, and we have often exhibited it in syphilis and diseases of the liver, occurring in scrofulous constitutions, in the dose of a grain night and morning, salivation being produced in eight or ten days. The Edinburgh College have not thought proper to insert this medicine into their Pharmacopœia; it has been admitted into all the other works on our list.

Test of Purity. The test of the London Pharmacopœia is not precise in its application, with the exception of its insolubility in chloride of sodium. Mr. Pereira states that

"It is a greenish-yellow powder, whose sp. gr. is 7·75. It is insoluble in water, alcohol, or an aqueous solution of chloride of sodium; but is soluble in ether, and slightly so in an aqueous solution of iodide of potassium. When heated quickly, it fuses and sublimes in red crystals, which subsequently become yellow. Solar light decomposes it, and changes its colour. Heated with potash, it yields iodide of potassium and reguline mercury." (p. 481.)

To this may be added the disengagement of iodine when heated with concentrated sulphuric acid in a glass tube.

Biniodide of Mercury, (Hydrargyri biniodidum.) The red iodide of mercury is an extremely acrid and poisonous substance, and when applied to the skin produces vesication and excoriation. It is rarely exhibited internally, as it does not seem to possess any peculiar advantages as a mercurial, and the proportion of iodine which a minute dose contains holds out the prospect of little benefit from it, as far as its operation is concerned. The remarks of Sir James Wylie and Mr. Pereira upon its employment are very short, and they do not indicate much practical experience of its external operation. In the Russian Pharmacopœia, the proportions given for the formation of the ointment are, biniod. hydrarg. ʒss, ceræ flavæ ʒij, adip. suill. ʒvj, or 30 grs. to an ounce; and Mr. Pereira considers the following a dilute ointment in opacity of the cornea, viz. biniod. hydrarg. gr. ij, cerat. ℈ij, ol. amygd. ℈j, Now we venture to assert that the irritation produced by either of these ointments would be such that either high inflammation or intense pain would prevent the use of them for any length of time. Indeed we have often found the proportion of 10 grains to an ounce of cerate, which is recommended by several foreign authorities, in general too great, causing frequently intense pain and vesication around the margins of the ulcer. In most cases 2 or 3 grains to an ounce of cerate have appeared to us sufficient, and when the proportion is 10 grains and upwards, the oint-

ment ought to be heated and applied with a hair pencil to prevent its action on the surrounding parts. With attention to these points, we have found this agent most beneficial in the cure of old ulcers, and lupoid and syphilitic sores, more particularly when occasionally alternated with the employment of nitrate of the silver. The ointment of the London College, viz. biniodide of mercury ʒj, white wax ʒij, lard ʒvj, is enormously disproportioned, and is made of the same strength as that of the iodide. The Edinburgh College, perhaps considering this a debateable subject, have given no formula for its preparation. Sir James Wylie recommends 10 grains to an ounce of axunge in his history of this agent, but 30 grains are ordered in the formula.

Preparation. The old plan adopted in the preparation of the iodides of mercury was by double decomposition of a mercurial salt by the hydriodate of potass, and the Danish College still adhere to it; but in the London, Edinburgh, and Russian Pharmacopœias, the direct combination of the iodine and mercury by trituration is adopted, according to the plan originally proposed, we believe, by M. Berthemot.

This is certainly the most simple formula, and we doubt not answers the purpose very well, although the iodine is liable to be volatilized during the trituration. The biniodide may also be prepared very purely from corrosive sublimate and the iodide of zinc in the proportion of 100 of the former to 85 of the latter. The Edinburgh College, however, have adopted an expedient which is well calculated to ensure its purity, viz. to dissolve it in a concentrated solution of chloride of sodium, which will free it from any iodide; and the iodide itself being insoluble in that fluid might be freed from any adhering biniodide, if the same plan were resorted to. There is an objection to this solution in the chloride of sodium, that a portion of the biniodide may remain dissolved and thus be lost; besides, the proportions of the common salt and water ought to have been given, for the term concentrated is rather indefinite. For full information respecting the iodides of mercury we refer our readers to Dr. Dunglison's articles.

Tests. The Edinburgh College recognize its purity by its entire volatilization, its complete solubility in a concentrated solution of common salt at 212°, and its subsequent deposition in the form of fine red crystals. We believe that these tests are capable of recognizing all ordinary adulterations or impurities. Those in the London Pharmacopœia, however, are more numerous, although the mode of operating with the muriate of soda is not described.

Indigo, (Indicum.) The qualities of this substance as a pigment are well known in the arts, but as a medicine it has scarcely been tried by British practitioners. It has of late, however, been employed successfully on the continent in several diseases, particulary in epilepsy; and although we by no means pledge our belief to all that has been written regarding its therapeutic powers, it is fairly entitled to be tried, more particularly as this disease must in many cases be set down as incurable, and as no deleterious consequences followed the use of the agent. We find it well described in the works of Mr. Pereira, Dr. Dunglison, and Sir James Wylie, and shortly in the list of materia medica of the Danish College. Sir James Wylie speaks cautiously regarding its virtues.

"In the deficiency of proper experiments," he says, "I am not unmindful

that the utility of indigo is allowed by Rhül and Dr. Spasky, being commended for the cure of certain neuroses; wherefore I have reckoned it worth while to insert this new remedy into this *small* work, namely, that it may be subjected to ulterior experiments." (p. 198.)

Many species of indigoferæ are cultivated for the manufacture of indigo. These plants, according to Sir James Wylie, grow in Java, India, Arabia, Egypt, the Philippine Islands, Luconia, in the northern and southern provinces of Hindostan; and are also very frequently met with in Tinnevelli, Gautimala, and Caraccas. When in flower they are cut with sickles, and being arranged in strata in proper vessels, water is poured upon them. The liquor runs into fermentation, being green at the beginning, but changing into a coppery red colour. Lime water is added to it and mixed by agitation, it is then withdrawn by the inferior orifice into another vessel and allowed to settle, and afterwards deposit the pigment in the form of purple flakes. Commercial indigo consists of indigo-blue (indigotin) which is volatilized at 550°, indigo-brown, indigo-red, and a glutinous substance. Berzelius states that indigo seldom contains the half of its weight of blue colouring matter, more frequently less, that it is adulterated with sand, powdered bricks, and similar substances, more rarely with starch. Good indigo should float on the surface of water, and the less its sp. gr. the better is the quality. It ought to have a deep blue colour, and the more brilliant and analogous to copper the colour becomes by friction, the purer is the indigo.

The physiological effects of indigo in full doses are chiefly nausea, vomiting, and diarrhœa, colic pains, and other dyspeptic symptoms. The urine has generally a dark-brown violet colour. It ought to be commenced in the dose of a few grains, exhibited three or four times a day, which is to be gradually increased to drachms; so that the patient may take one or two ounces in twenty-four hours. On account of its lightness when pulverized it should be given in the form of electuary.

Arrow-root. (From Maranta Arundinacea.) We are induced to notice this article here, although now so well known as an article of diet, on account of the various opinions held respecting its nutritive properties, when compared with the amylaceous products of Great Britain. Mr. Pereira states that the maranta arundinacea was brought from the island of Dominica to Barbadoes, and from thence it was sent to Jamaica. The native Indians, according to Colonel James Walker, apply the bruised root to the wounds which they receive by poisoned arrows. In Jamaica this plant is cultivated in gardens and provision grounds. The following is Mr. Pereira's account of the extraction and properties of the fecula:

"The roots (tubers), when a year old, are dug up, well washed in water, and then beaten in large, deep, wooden mortars to a pulp. This is thrown into a large tub of clean water. The whole is then well stirred, and the fibrous part wrung out by the hands and thrown away. The milky liquor being passed through a hair-sieve, or coarse cloth, is suffered to settle, and the clear water is drained off. At the bottom of the vessel is a white mass, which is again mixed with clean water and drained; lastly, the mass is dried on sheets in the sun, and is pure starch. The fecula (fæcula marantæ), called in the shops West Indian arrow-root, is white, odourless, and tasteless. It is in the form either of a light opaque white powder, or of small pulverulent masses. When pressed between the fingers it feels firm, and when rubbed, produces a slight crackling noise. Examined by the microscope it is found to consist of granules, which

are never perfectly spherical, but are frequently elliptical, sometimes obscurely triangular, and occasionally have the shape of a painter's muller." (p. 679.)

Purity. "Potato-starch (sold in the shops as English arrow-root) is said to be sometimes substituted for the Indian arrow-root. The fraud may be readily detected by a good microscope. The particles of potato-starch are distinguished from those of Indian arrow-root by their larger size, and by the concentric markings on their surface.

"Recently a fecula has appeared in the shops, under the name of Tous les Mois, or Starch of the Canna coccinea. It comes from St. Kitt's; and is said to be prepared by a tedious and troublesome process, from the root (rhizome) of the plant above named. It has been recommended as forming a valuable article of food for the invalid. On a microscopic examination of it, I find that its particles agree in form and structure with those of the ordinary potato-starch, from which, however, they are distinguished by their larger size." (p. 680.)

Even by the aid of an ordinary magnifier, such as is used in the examination of plants, we have been able to detect the difference in appearance that exists between some of the varieties of feculæ. Viewed through this medium, potato-starch presents the appearance as if densly studded with small globules of mercury; arrow-root has the aspect of pulverized and rather imperfectly-crystallized sugar, and wheat-starch only exhibits a glistening appearance.

The sophistication of arrow-root with potato-starch is not injurious as far as the health of the public is concerned; for though the former is the strongest fecula, and forms the most consistent jelly, yet the difference between them in point of digestibility and nutritive power is very immaterial; at the same time, as the one is frequently quadruple the price of the other, it cannot be considered in any other light than as a fraudulent imposition.

East Indian arrow-root is procured from the curcuma angustifolia, and it is sometimes mixed with that prepared in the West Indies, although generally bought by starch-makers. Mr. Pereira states that it may be distinguished by its want of firmness and crepitation, when pressed or rubbed between the fingers, and that it resembles finely pulverized salt, or bicarbonate of soda. Brazilian arrow-root is the fecula of the iatropha manihot.

Milk, (Lac vaccinum.) According to Pereira, the sp. gr. of milk is about 1·030, when recent it is slightly alkaline, and when viewed by the microscope it is observed to consist of myriads of globular particles floating in a serous fluid. These globules consist essentially of butter, and disappear on the addition of caustic alkali.

The following is the analysis of cow's milk, according to MM. O. Henry and Chevallier:

"Caseum	4·48
Butter	3·13
Sugar of milk	4·77
Various salts	0·60
Water	87·02
Total	100·00
Solid substances	12·98" (p. 1405.)

The characteristics of good milk, as given by Pereira, are as follow:

"The following are the essential morbid changes which have been recognized

in milk: Want of homogeneousness, imperfect mobility or liquidity, capability of becoming thick or viscid on the addition of ammonia, and presenting, when examined by the microscope, certain globules (agglutinated, tuberculated, or mulbery-like, mucous or pus globules) not found in healthy milk. Hence, then, good milk should be quite liquid and homogeneous, not viscid; and should contain only spherical transparent globules, soluble in alkalies and ether; should not become thick when mixed with ammonia; and should form a flocculent precipitate with acetic acid, but not be coagulated by heat. The relative quantity of cream afforded by milk is estimated by a graduated glass tube, called a lactometer." (p. 1406.)

Mr. Pereira does not take any notice of the adulteration of milk, so commonly practised. When flour and water are used for this purpose, the former is easily detected by the blue colour it strikes with iodine, particularly if the curd be previously separated by sulphuric acid. In Paris, milk has been sophisticated by an emulsion of almonds or of hemp seed sweetened with sugar. This factitious milk may be detected by the oily nature of its curd. When the latter is pressed between the fingers or on paper the oil exudes from it, which is not the case with the curd of pure milk. The quantity of curd procurable from milk so adulterated is always greatly diminished. When milk during summer curdles or coagulates by the formation of lactic acid, the fluidity is restored by the addition of a small quantity of subcarbonate of potash. Some very excellent observations are made by Pereira on the influence of many medicines taken by the mother over the suckling infant, and the care requisite in the selection of a nurse. From observation, we are quite satisfied of the truth of this author's remarks: we have often witnessed the injurious effects of the milk furnished by dyspeptic nurses, particularly when they were addicted to the use of ardent spirits.

Our limits do not permit us to extend further our notices of individual formulæ and remedies. We shall therefore conclude the article with a few general remarks on the character of the works before us, at the same time adverting briefly to a few particulars which could not be properly introduced before.

Edinburgh Pharmacopœia. In the present edition of this work, a great many improvements have been adopted, by the addition of approved therapeutic agents, the introduction of tests, the alteration of some of the formulæ, and in the expulsion of several inert or inefficient substances from the list of medicines. The substitution of measures instead of weights for ascertaining the quantities of fluids, as previously adopted by the London College, will facilitate very much the compounding and correct administration of medicines. The additions, which are considerable, are for the most part very judicious, almost all the new medicines being generally acknowledged to be useful agents. The number of articles expunged seem to be nearly as numerous as those introduced, and the exclusion of almost all of them is perfectly proper. We think, however, that the Artemisia Santonica which is a good vermifuge, Mace which is useful in checking vomiting, particularly in children, Oleum Lauri nobilis, which is an excellent rubefacient, ought to have been retained. Why Anchusa, which is used for colouring oils, tinctures, &c., has been expunged, and Papaver rhœas introduced for a similar reason, is not very obvious.

The tests employed for ascertaining the purity of medicinal agents are in general very precise, capable of detecting the usual adulterations, and a considerable number of them are more definite than those adopted by the London College, which in many instances consist chiefly of the general chemical characteristics of the substances. Some of those, however, of the Edinburgh College would have been rendered more complete if their prominent chemical characteristics had been added; for as those who sophisticate medicines are constantly on the alert to avoid discoveries, some new method might be resorted to by them to avoid detection. The Edinburgh College have the merit of introducing a number of very valuable tests for various vegetable substances, which are by far the most difficult of application, and some of them are exceedingly good, such as that for the sulphate of quina (quinometry,) which Mr. Pereira considers the best method. The mode of ascertaining the quantity of morphia in opium is also good (morphiometry), but, as Mr. Pereira remarks, it will require some care in the application of the heat, as this alkaloid is soluble in a solution of subcarbonate of soda. The test for olive oil is that discovered by M. Poutet, and it is very precise, for no other fixed oil subjected to the acid nitrate of mercury solidifies so rapidly or acquires in so short a time the same hardness of texture. It is capable of detecting a very small proportion of poppy or linseed oil; but the presence of the latter, if not cold-drawn, may also be discovered by the yellowish colour it communicates to strong alcohol. In this country rape oil is most frequently employed for its sophistication, and a small portion of it may be mixed with olive oil without preventing the solidification; but the resulting compound with the acid nitrate of mercury is always softer and more brown in colour, and these characteristics are much more distinct when the quantity of rape oil is much increased. We are surprised that this test for olive oil is not in the London, Danish, or Sir James Wylie's Pharmacopœias. We admire the simplicity of the Edinburgh test for arsenic, which we have always found sufficient, viz., complete sublimation, for we should think there is no volatile substance cheap enough to be employed as an adulterating ingredient. Their test for vegetable matter or essential oil in alcohol, viz., the nitrate of silver, is elegant, and it might also detect some of the usual substances employed in its rectification. Alum is stated not to be subject to adulteration, and we believe that this is by no means common; but Mr. Pereira mentions that it is sometimes mixed with the ferro-sulphate of potash, and that it cannot be distinguished from the latter by its form, colour, or taste, but is readily detected by potash, which throws down oxide of iron, and by tincture of nut-galls which communicate a bluish-black colour to it. The test for camphor is very simple and good, viz., its complete sublimation. The mode of recognizing the powder of conium by trituration with aq. potassæ is calculated to be very useful; but even simple friction of the leaves eliminates the odour of this narcotic. The test for oil of cinnamon is its conversion nearly into a crystalline mass by nitric acid. Will this distinguish it from oil of cassia? Mr. Pereira states that oil of cassia is nearly solidified with nitric acid. Although, however, it may not be capable of distinguishing the adulteration of oil of cinnamon with oil of cassia, we believe it to be an excellent test for recognizing the presence of many other oils, such as oil of turpentine, fixed oils, &c. An

intense action follows the admixture of nitric acid with oil of sassafras, and when the latter is combined with oil of cinnamon its solidification is prevented. This experiment we tried, because we thought it likely that oil of sassafras, as belonging to the same natural family with oil of cinnamon might behave in a similar manner with nitric acid. Even oil of olives, although solidified by the acid nitrate of mercury when mixed with oil of cinnamon, also prevents its complete solidification.

Acetate of potass is stated not to be subject to adulteration; but if it be prepared from an impure carbonate of potass it must contain impurities. The tests for this salt in the London Pharmacopœia are pretty good. The mode employed for ascertaining the purity of bitartrate of potass is greatly superior to that in the London Pharmacopœia. The ordinary and pretty well known test for castor oil, viz., its solubility in strong alcohol, has been introduced, and we are astonished that it is not in the London Pharmacopœia.

The tests for the adulteration of scammony are of considerable value, for its high price offers great inducements to sophisticators.

Argel leaves are directed to be removed from Alexandrian senna by picking, but their characters are not given, which is an omission. Pereira gives the following account of argel leaves:

"The argel plants are collected by the Arabs, in the valleys of the desert to the east and south of Assouan. The *leaves* found in Alexandrian senna are distinguished from the senna leaflets by their being equal-sided, by the absence or imperfect development of the lateral nerves, by their paler colour, thicker and more coriaceous texture, by a yellowish exudation frequently found on them, and generally, though not invariably, by their greater length. By careful picking the flowers may be detected: they are white, and in small corymbs. The fruit, as found in Alexandrian senna, seldom exceeds in size that of a good-sized orange-pip. It is an ovoid follicle, tapering superiorly, brown, shrivelled, and contains several seeds." (p. 1165.)

The test with iodine for the adulteration of mustard with flour is very properly introduced, as this sophistication is frequently practised. The test for strychnia is more definite than that in the London Pharmacopœia, but its characters are well described by Mr. Phillips.

We shall now notice shortly one or two of the processes, which have been much improved. The improved process for the preparation of tartaric acid is literally adopted from that in the London Pharmacopœia, as well as that for citric acid; the latter, however, has some modifications which ensure the complete saturation of the sulphuric acid employed. The Edinburgh college have also adopted the method of preparing benzoic acid by sublimation, which is the most convenient and productive. Their process for muriate of morphia is undoubtedly the best, and we believe that it has been practised on the large scale with a productive return. That for sulphate of quina is also good and must be cheap, from there being no alcohol employed. We also highly approve of the introduction of the acetate of morphia; for though the muriate is more generally employed, the acetate is at least equally good. We have often practised a cheap method of preparing it from laudanum, by double decomposition with acidulated acetate of lead, the acetic acid being added to prevent any precipitation of the morphia with the resulting meconate of lead. The acetum opii, which is now introduced from the Dublin Phar-

macopœia cannot be considered a proper acetate of morphia, although it is stated to produce similar effects to the salts of morphia. The Edinburgh college, we think, have displayed good sense in delaying a process for bromide of potassium, until its powers have been more thoroughly tested, even although it has been introduced into the London Pharmacopœia. The Edinburgh college state that distilled waters may be prepared by agitating the essential oil of the plant with water. This plan, we apprehend, will not impregnate the water sufficiently; and most practical pharmacians, who adopt this method, triturate the oil with sugar and a little water in a mortar, before the whole of the latter is added. The introduction of enemata are calculated to be useful. Starch is directed for the preparation of this opiate enema, but a simple solution of laudanum in tepid water in general answers equally well.

The number of extracts have been greatly increased, and most of them are valuable. The new method of making the tinct. mur. ferri from the red in place of the black oxide of iron, as formerly adopted, is an improvement, for the tincture of the proto-muriate always ultimately becomes peroxidised, and it is besides often deficient in strength. The formula for calomel has been improved, and several mercurial preparations of little practical value have been expunged. The iodide of lead is new; it is prepared from the nitrate of lead, which is superior to the process of the London college from the acetate, in as far as there is no risk of the formation of a sub-iodide, which sometimes occurs, particularly when the acetate of lead is not acidulated with acetic acid, as has been shown by M. Denot.

The *mistura scammonii* is a convenient formula for children: it is as follows:

"*Mistura Scammonii.* Take of resin of scammony seven grains, unskimmed milk three fluid ounces: triturate the resin with a little of the milk, and gradually with the rest of it till a uniform emulsion is formed." (p. 119.)

Several new and important formulæ for pills have been added; and it would have been an improvement if the soap employed in the manufacture of some of them had been directed in powder, as in the Danish Pharmacopœia, for we are persuaded that this article is often very imperfectly combined with the other ingredients. Syrupus rhamni, which is a convenient and pretty certain purgative for children, and the improved syrupus sennæ, are valuable additions; we give the formula for the latter:

"*Syrupus Sennæ.* Take of senna, four ounces; boiling water, one pint and four fluidounces; treacle, forty-eight ounces; infuse the senna in the water for twelve hours; strain and express strongly through calico, so as to obtain a pint and two fluidounces at least of liquid. Concentrate the treacle in the vapour-bath as far as possible, or till a little taken out upon a rod becomes nearly concrete on cooling; and while the treacle is still hot, add the infusion, stirring carefully, and removing the vessel from the vapour-bath as soon as the mixture is complete." (p. 154.)

In the preparation of tinctures, percolation is recommended in the majority of instances. Several new tinctures have been added, and there is a modification in the preparation of laudanum, by which the opium is submitted first to the action of hot water, and then to that of rectified spirit.

We are surprised that the Edinburgh college, among many valuable additions, have not added to their list the iodide of sulphur, which is a valuable remedy for lupus, porrigo and lepra; but neither is it to be found in the other works noticed in this article, with the exception of a short account of it by Mr. Pereira and by Dr. Dunglison. The present edition of the Edinburgh Pharmacopœia has been published in a much more portable and convenient form than the last, and though the type is smaller, yet it is sufficiently distinct and legible. It is on the whole a work of great merit, indicating accurate and extensive knowledge of similar and other scientific treatises; and is, both theoretically and practically, at least equal to any similar pharmacopœia.

Pereira's Materia Medica. On a former occasion (vol. VIII. p. 353) we noticed the first volume of this work. The second volume treats of vegetable and animal pharmacology. The author adopts a natural-historical in place of a physiological or therapeutical classification, a plan which was many years ago adopted by the late Dr. Duncan of Edinburgh, and which, we believe, is still followed by his distinguished successor Dr. Christison. This plan of teaching and writing is undoubtedly more in accordance with abstract science than the mode generally adopted of describing the different substances under a classification derived from their action on the healthy or diseased functions of the body. At the same time it must be admitted, that the latter methods have some advantages in a practical point of view, in as far as such an association fixes in the student's memory more quickly the peculiar action of the agent described. The tabular view which is given of the history and literature of materia medica must be very useful to those engaged in such investigations, including as it does a list of the works ancient and modern, which have been published in almost every country in the world. We consider Mr. Pereira's descriptions of the vegetable and animal materia medica as exceedingly clear, methodical, and minute, including an account of many substances not generally described by writers on pharmacology. In noticing the first he gives the history, botany, habitude, description, commerce, composition, chemical characteristics, physiological effects on the brain, spinal system, digestive system, vascular system, respiratory system, urinary system, sexual system, cutaneous system, topical effects, uses, administration, preparations. We refer our readers to the article opium, which occupies about forty-eight of his large and closely printed pages, to show the admirable minute and methodical manner in which this subject is handled; comprising, in short, every thing connected with its history and properties that could be desired by the practitioner, or even wanted in ordinary juridical investigations. Several of his other articles are equally elaborate.

The second volume fully supports the character which we expressed of the first. We have no hesitation in stating that, in almost every particular, it is superior to any similar work in the English language; and we know of none which exemplifies so completely the rare combination of minute knowledge in natural history, botany, and chemistry, with sound and practical therapeutics. We fear, however, although we would regret this, that the minuteness of detail, as well as its price, will limit to a certain extent its general employment as a class-book for students. We suspect that the price has been unnecessarily increased by the intro-

duction of wood-engravings, some of which are not necessarily connected with the subject, and many do not convey a good idea of the substance intended to be represented.

Sir James Wylie's Military Pharmacopœia. This work may be considered both as a treatise on pharmacology and a pharmacopœia, and in many respects it is similar to our British dispensatories. He divides it into three parts: in the first he treats of vegetable and animal medicines; in the second, of mineral and chemical medicines; and in the third, of preparations and formulæ. The work is commenced by a short exposition of the modern chemical nomenclature, with an account of the medical weights and measures, which appear to be the same as those adopted in this country. The medical pound contains 5760 grains, while the Russian mercantile pound contains 6586·08. The same liquid measures are also employed; namely, the gallon, pint, fluid ounce, fluid drachm, and minim.

The descriptions in the pharmacological part of the work are in general clear and accurate, and comprehend the modern discoveries in natural history, botany, and chemistry. Short accounts are also given of some dietetic articles, as the gramineæ, the sheep, ox, &c. The toxicology of many articles of the materia medica is pretty fully described; and there is a long and excellent article on arsenic, accompanied with a comparative table of precipitates from arsenical and other solutions by the various reagents employed as tests for this metal. Tables of the contents of various Russian and several other mineral waters are also given. Almost all the new remedies that have lately flowed in upon us so copiously have been introduced; and there are formulæ for the preparation of Carlsbad and Cheltenham salts, a bath of the sea containing iodine and bromine, &c. Even the mode of manufacturing the capsules of copaiva is described, which the author calls *baccæ*. We do not quarrel with him for describing these and many other substances in his pharmacology; but when particular formulæ are given for their preparation, in a national pharmacopœia, this stamps them with an authority which should only be conferred when their powers have been fully ascertained. A very great number of inert vegetable preparations have been admitted, and there are no fewer than forty-four formulæ for extracts, among which are those from fumaria officinalis, triticum repens, marrubium vulgare, matricaria chamomilla, saponaria officinalis, tanacetum vulgare, achillea millefolium, inula helenium, viola tricolor, ligusticum levisticum. The extract of milfoil is said to be useful in hypochondriasis, spasms, inflation, and to those who are vexed with nocturnal pollutions. The formula for the preparation of emplastrum lithargyri, which is directed to be made with five parts of litharge and nine parts of axunge, is greatly superior to the plan recommended in the London, Edinburgh, and other Pharmacopœias, namely, with olive oil, inasmuch as the plaster is less liable to crack when spread upon calico; and we believe that many practical pharmacians use at least a third of axunge in the composition of their litharge plaster. A tincture of strychnia has been introduced, namely, strychnia 3 grains, purest alcohol 1 ounce, which is exhibited in the dose of from six to twenty drops. This will be found a useful formula for graduating correctly the dose of this dangerous medicine. The formula for the *lapis divinus*, which is occasionally used in the form of collyrium

in different diseases of the eye, and recommended by some writers, is the following:

"℞. Sulphatis cupri,
Supersulphatis aluminæ et potassæ,
Nitratis potassæ, singulorum unciam;
misce, et liquefac calore auctiori; sub finem adde:
Camphoræ tritæ drachmam dimidiam. Misce." (p. 783.)

The *pilulæ colocynthidis ferrosæ* are somewhat singular in their composition; but they are stated to be useful as resolvents, aperients, cathartics, stimulants to the viscera and intestines, promoting secretion and quickening the flow of blood in the portal veins.

"℞. Extracti colocynthidis compositi drachmas tres,
Assæ fœtidæ,
Saponis oleacei, vel
Bilis taurinæ spissatæ,
Hydrochloratis ammoniæ ferrosi,
Extracti chelidonii, singulorum drachmam,
Tartratis stibii et potassæ grana novem,
Olei chamomillæ guttas triginta; si opus,
Syrupi simplicis quantum sufficit.
Misce, fiat lege artis massa, in pilulas pondere granorum duorum dividenda, pulvere lycopodii conspergendas." (pp. 749-50.)

Lugol's solution of iodine has been adopted, which is a very convenient formula, and superior to the tincture of that substance; there is also an elegant acid solution of sulphate of quina in the tincture of aurantium. The pilulæ hydrargyri are made with mercurial ointment. The decoctum cinchonæ acidulatum is a good preparation, and must contain more quinine and cinchonine than that prepared by water.

"℞. Cinchonæ cordifoliæ contusæ unciam,
Aquæ communis uncias sedecim,
Acidi sulphurici diluti drachmam.
Coque in vase leviter clauso per sextam horæ partem, et liquorem adhuc calentem per linteum rarum et vetustum exprimendo cola." (p 698.)

In conclusion we may remark, that the military pharmacopœia has few defects when compared with its merits; and we fully credit the distinguished author when he states in his preface, that the composition of it occupied him for three years. It is throughout characterized by accuracy of research, generally by sound therapeutic views, and by an acquaintance with the modern discoveries in medical science. The Latinity is on the whole good; the work is beautifully got up, and extends to upwards of 800 pages; the type is large and distinct.

Danish Pharmacopœia. This new edition of the Danish Pharmacopœia was published last year, and certainly it was the incumbent duty of the college to bestir themselves after a lapse of thirty-seven years, the previous one being published in 1805. This, however, might have been overlooked (as royal colleges often possess a kind of vis inertiæ in the execution of such matters), if the work had been well managed after so much time allowed for experiment and the collection of facts. Some of the modern improvements and discoveries in pharmacy and chemistry have been introduced, but upon the whole it is decidedly deficient in these particulars; and, besides, there are retained in the materia medica,

and among the formulæ, substances and compounds that have long ago been considered, at least in this country, inert or inefficacious in the cure of diseases.

Some of the tests for ascertaining the purity of the different substances are pretty good, but many of them are defective. The Danish college have not availed themselves to a proper extent of the recent researches and publications connected with this subject. It is stated at page 9, under the article gold, that "solummodo in aqua regia solubile." Now this metal is also dissolved by chlorine, bromine, &c. Sulphate of copper (Blaa vitriol) at page 22, is said to be soluble in two parts of water. This is true as regards boiling water, but it requires four parts of water at 60 degrees for its solution. The presence of copper in extracts is directed to be ascertained by the old and indefinite method of thrusting a polished plate of steel into them. The tests for the hydriodate of potass are simply its form, the proportions of its solubility in water and in alcohol. After the formula for the carbonate of magnesia (magnesia carbonica, kulsyret magnesia), it is added,

"Sit massa nivea, voluminosa, acido sulphurico diluto prorsus solubilis, quæ solutio neque kali carbonico neque acido oxalico turbetur." (p. 184.)

This is an obvious error. The very process for its preparation shows, that when magnesia is dissolved in diluted sulphuric acid, it will be rendered turbid by a carbonated alkali. The test for the presence of oil of turpentine, or ætherial oil in oleum petræ (petroleum), is fuming nitric or sulphuric acid, which calorifies, colours, or thickens the sophisticated oil. Under nitric acid, p. 90, after nitrate of barytes and nitrate of silver are mentioned as reagents, the following indefinite expression is employed: "affusa aqua hydrothionica non prodat metalla." And here we may state, that the latinity of this work is even less classical than usual in such compositions. The Danish Pharmacopœia, however, contains almost the whole of our old and most efficient medicines. The authors of it have also introduced a considerable number of the "new remedies," such as hydrocyanic acid, croton oil, iodine, iodides of mercury, morphia, strychnia, veratria, acetic ether, muriate of gold, sulphuret of carbon, phosphorated ether, dry phosphoric acid, ergot: this evinces a desire in the college to adopt modern improvements, although several of them might have with propriety been omitted.

The chemical formulæ are in general tolerably correct, although some of them are objectionable. For example, calomel is prepared by precipitation from the protonitrate of mercury, and for the latter there is also a separate formula. In the preparation of the sulphuret of potassium, the proportions of sulphur are too great, namely, 7 parts of kali carbonicum and 4 of sulphur. In preparing morphia, the expensive process by alcohol and ether to remove the narcotine is adopted. There are processes for purifying sulphuric, succinic, and nitric acids; that for the latter is accomplished by the nitrate of silver, which might be effected nearly as well and more cheaply by purifying the nitrate of potass previously to distillation, as directed in the Edinburgh Pharmacopœia. The process for sulphate of quina is complicated and expensive, muriatic acid, caustic alkali, lime, and spirit of wine, being all employed. There is also one for the muriate of quina, by the decomposition of the sulphate

with muriate of barytes. The process for liquor ferri muriatici is objectionable, inasmuch as the peroxide of iron is directed to be boiled with muriatic acid, which will volatilize the latter. Maceration would have answered the purpose sufficiently, as directed in other pharmacopœias. The vinum colchici is made from the seeds, in the proportion of two ounces of them to one pound of white wine, and in our opinion is a more certain preparation than that made from the root, as in the London and Edinburgh Pharmacopœias. The tinctura cantharidis concentrata would form, we doubt not, a very good vesicant, being directed to be made with 12 ounces of most rectified spirit of wine and 3 ounces of cantharides. The spirit of wine however has only a sp. gr. of 0·835 to 0·845, notwithstanding the verbum sesquipedale with which it is accompanied, namely, "rectificatissimus." There is a process for the combination of Irish moss with chocolate, which we shall quote, as it may prove interesting as a dietetic prescription.

"Pasta cacao cum lichene carragheno. Chocolade med carraghen-mos.
℞. Seminum cacao modo nuper descripto in massam subtilissimam redactorum,
Sacchari albi pulverati, singulorum libras duas,
Lichenis carragheni pulverati uncias tres.

Quæ bene commixta solito modo in taleolas quadrangulatas formentur." (p. 204.)

The pulvis jalapæ comp. is made with 2 parts of jalap and 1 of sulphate of potass. At p. 124 there is a regular confectionary process for encrusting the seeds of the artemisia santonica with sugar, in the same way as coriander and caraway seeds are so manufactured. We doubt very much, that even a thick stratum of sugar will so conceal the bitter taste of this vermifuge, as to render it agreeable to the gustatory organs of children. There are several decoctions of bark, and the decoctum chinæ acidum is made by adding aromatic sulphuric acid to the ordinary decoction. It would have rendered the preparation more effective, if the acid had been added to the water before the boiling. The emplastrum stibiatum is not a good formula, being made by adding 1 part of tartar emetic to 3 parts of adhesive plaster, as there is some risk of decomposition. It is better, when this salt is employed in the form of plaster, to dust it upon a piece of adhesive strap. The extractum ferri pomatum is made by maceration, and subsequent boiling of iron filings with apple-juice, which we doubt not will form a very good preparation of iron. There is a singular formula, inserted at p. 155, named farina hordei preparata (bryst-meel—breast-meal.) This preparation is directed to be made by putting barley flour into a sack, and boiling it in water for fourteen hours in a copper cauldron; then taking it out and removing its grey exterior, dividing the remainder into slices, which are to be dried, pulverized, and put into close vessels, in a dry place. What advantages this process can have we cannot conceive.

In the Danish Pharmacopœia, the weights employed are those commonly called the apothecaries'. The standard liquid measure ("mensura nostra Dan. Pol.") is equal to thirty-two ounces. Some excellent rules are given for the dispensing of medicines, which if rigidly enforced, as we doubt not they may be in Denmark, will prevent apothecaries from adding anything to pills, mixtures, &c., to facilitate their manipulation, or to render them more agreeable. The normal weight of the pill (unless

otherwise prescribed) is two grains, and the purified medicine must always be furnished if not otherwise specified. A table of the doses of *heroic* medicines is given, which cannot be exceeded without special prescription by the physician. The old names are, generally speaking, retained, but are accompanied, in the department of materia medica, with an account of the chemical composition of the agent, or with the botanical name of the vegetable from which it is procured, as well as with short descriptions of the substances themselves; and upon the whole this part of the work is pretty well executed.

Phillip's Translation of the London Pharmacopœia. On a former occasion we expressed a high opinion of Mr. Phillips's translation of the Pharmacopœia, or what with more justice might be called a commentary upon the tests and processes contained in it, accompanied with a translation. The London College are under deep obligations to this author for his clear and valuable illustrations: indeed many tests and processes would be unintelligible to students without them. This is well exemplified, conversely in the case of the Edinburgh Pharmacopœia, which in many particulars must be imperfectly understood, and on this account will be less valuable to the student until this deficiency is supplied. Mr. Phillips has also in many cases given the additional characters of the agents treated of, which are uniformly the result of the most modern chemical researches; and in respect of pharmaceutical accuracy and illustrations his translation of the pharmacopœia is unrivalled by any similar British work.

Dunglison's New Remedies. Dr. Dunglison's work, like that of Mr. Phillips, has gone through several editions within a very short period, which shows the high estimation in which it is held by the profession. His pharmaceutical, toxicological and therapeutic researches are very elaborate and extensive, and prove that he is familiar with all the modern discoveries; whilst his own practical deductions are in general cautious and very judicious. The work contains a complete account of almost every substance that has been recently introduced into practice, some of the articles being very fully described, such as iodine, creosote, &c.; it is well adapted for the guidance of those who wish to prescribe agents that they are imperfectly acquainted with. His formulæ are numerous and various, being chiefly derived from those authors who have written respecting the agents described. Some very useful remarks are also made upon subjects not generally included in pharmacological works; such as acupuncture, electro-puncture, compression, counter-irritation, moxa, galvanism, catheterism of the eustachian tube, &c. The present edition, besides some other improvements, contains an account of several entirely new agents, as iodide of ammonia, iodide of arsenic and mercury, cimicifuga, lactate of iron, protocarbonate of iron, monesia, &c. The author has also given a short account in his preface of some other new remedies, although he thinks the testimony in their favour is not sufficient to justify their admission into the body of the work. These are, anthrakokali, a compound of coal and potass, containing in another formula also sulphur, and employed in chronic cutaneous diseases; sulphate of cadmium employed to remove spots from the cornea and in chronic conjunctivitis; gentiana chirayta and paulinia. We regret that our limits forbid our making any extracts from this work, but we cordially recommend it to the notice of our readers.

Art. IV.

Elements of Medicine. Vol. II.—*On Morbid Poisons.* By Robert Williams, m.d. &c. &c.—*London*, 1841. 8vo, pp. 686.

In a review of the first volume of this work published in our Tenth Number, we expressed an opinion on the whole favorable to its merits. We acknowledged the ingenuity of the writer, and the extensive information, derived both from reading and experience, which he brought to bear on the subjects of which he treated. At the same time we stated our belief that some of the *laws* which he conceived to have been established were the result of partial induction, and either incompatible with the actual state of knowledge, or likely to prove invalid in its future progress. The present volume is entitled, in full measure, to the praises bestowed on its predecessors, and the legislative part is open to fewer objections because more limited in its scope. The general laws having been laid down in the former volume, those here insisted on relate chiefly to the individual poisons. With respect to these, the author's views will be found, for the most part, consonant with those of the best observers, although his phraseology is peculiar: what he calls the laws of the poison are very often simply what others might call the phenomena and habitudes of the disease; and the only objection to the term *law* is, that it is frequently impossible to reduce such phenomena and habitudes to any fixed law, or determinate sequence. Considered as a series of theoretical and practical essays on disease, the contents of this volume are well worthy of attention: they are evidently the result of much observation and reflection; the author is rich in materials of his own, and where he draws from the resources of others, he has the discernment to adduce only such statements and opinions as are worth listening to. In affirming that much of the peculiarity of this work resides merely in the terms employed, we should not be supposed either to misunderstand the main tendency of the author's reasoning, or to depreciate the importance of the distinctions which he seeks to enforce.

The living body is destined to perform certain functions, which are sustained by means of appropriate relations between its own powers and the agents adapted to call them into operation. In a general way, disease may be said to consist in the failure of such powers, or the disorder of such relations; but there are agents which can, under no circumstances, hold any relation to the living body but one subversive of its healthy functions: such are *malaria*, and the agents, whatever they may be, that produce *plague*, *typhus*, and various other diseases. In contemplating common disease, we witness an increase, diminution, or alteration of the ordinary actions of the system, such as may readily be conceived to arise from impairment of its intrinsic powers, or derangement of its ordinary relations; but in the operation of the noxious agents in question, we see, as it were, an assault upon all physiology, giving rise to a struggle in which the vital force successfully resists an influence repugnant to its laws, or sinks under its malignity. These agents may be called *poisons;* and there is one respect in which they are peculiarly entitled to the name; for whereas the substances usually so called are only relative poisons, the deleterious effect of which is contingent on quantity, and circumstances, *morbific poisons* are absolutely such, and

produce disease in all doses, and under all circumstances, in which they can produce a sensible effect of any kind. For example, arsenic, in quantities sufficient to cause a sensible effect, may operate beneficially, or fatally, according to the dose and the circumstances; but marsh miasma, received into the system in quantities sufficient to produce a sensible effect, is uniformly noxious, whatever be the dose or the circumstances. Now it is plain that the morbid phenomena occasioned by the subtile agents under consideration should be placed in a different category from those springing from the ordinary sources of deranged action: their theory must be essentially different; they must demand a different treatment; and we are led to look in different directions for the improvement of practice—expecting it, on the one hand, from an enlarged knowledge of morbid and remedial actions, and on the other, from the discovery of specifics and antidotes. Hence we see reason in Dr. Williams's view of "the propriety of separating this interesting class of disease, singular in its laws and peculiar in its treatment, from the great body of medicine with which it has been so long confounded." (Preface, p. vi.) We cannot, however, go all the way with him in the opinions here expressed. We do not think that enlightened pathologists, in modern times at least, have confounded the diseases in question with the great body of medicine, but that they let them continue attached to it because they did not know how to separate them; and we doubt, also, whether we are even yet in a condition to effect such a separation on any just or permanent grounds. We nevertheless fully admit the general truth of the distinction which our author inculcates, and think that it has been too little kept in view by the majority of medical reasoners: so important indeed do we consider it, that if its distinct enunciation constituted the only merit of the work before us, we should still say that it had not been written in vain. But, in truth, though the poisons and their laws were all left out of the question, enough would remain to render Dr. Williams's book interesting to the medical philosopher and practical physician. Let us proceed, then, to examine some of its particular contents.

The first three subjects, *vaccinia*, *syphilis*, and *gonorrhœa*, have so recently occupied our attention that we must pass by our author's essays upon them; but we would by no means advise the reader to do so, as they contain much useful information, and many judicious remarks—blended with others which we should be disposed to controvert did space permit. The next subject is *hydrophobia*. Dr. Williams has given a very copious and accurate account of this disease, both in its ordinary forms and occasional varieties; but we must entirely dissent from some of his conclusions. He maintains that the hydrophobic poison may exert its full influence on the nervous system, and rapidly destroy the patient without leaving any visible traces of disease; but that where it has had time to set up all its specific actions, certain morbid changes are always discoverable on dissection, consisting in increased vascularity of the brain, spinal cord, and their membranes, and of the structures supplied by the eighth pair of nerves. He believes that the poison is absorbed, and infects the blood, producing, after a longer or shorter period, functional derangement of the nervous centres and subsequent organic changes in the parts above mentioned. We entirely agree with him that the poison acts essentially on the nervous system; but we differ from him as to the probable manner

of its operation. In the first place, it seems to us by no means certain, though we admit it to be most likely, that the virus is absorbed into the blood at all. In traumatic tetanus, or in epilepsy arising from injury of a part distant from the brain and spinal cord, we can no more account for the occurrence of the tetanic seizure, or of the epileptic paroxysm, at one time rather than another after the reception of the injury, than we can account for the access of hydrophobia at a distant and uncertain period from the infliction of the bite; yet in the two former cases there is no virus in the question. That a virus is the cause of hydrophobia there can be no doubt, because the disease is never met with as the consequence of any other wound than that which is poisoned with the saliva of a rabid animal; this virus, however, may be conceived to act, not through its absorption into the blood, but by an impression on the nerves of the part which is propagated to the nervous centres in some manner to us entirely unknown. Secondly, supposing the symptoms to depend on the absorption of the poison, we see no reason to believe that it is taken into the blood immediately after the reception of the bite; on the contrary, we are more inclined to the opinion of those who maintain that the poison is localized in the injured part, and remains inactive till the time when its effects on the system become manifest. No local symptoms of activity are observed till immediately before the eruption of the general disease: then the bitten part usually becomes painful and presents indications of morbid action, the wound sometimes opening anew long after it has been healed, and discharging a sanious matter.

Analogous phenomena occur in traumatic tetanus. In this form of tetanus a morbid state of the nerves of the part, occasioned by a mechanical injury, becomes suddenly influential on the nervous centres by some mode of propagation which we cannot explain: in hydrophobia, one of three things happens: a morbid state of the nerves of the part, originally induced by the action of a poison, is propagated to the nervous centres without any further operation of the poison; or, the poison lying dormant for a time, suddenly begins to be absorbed into the circulation, and thus produces its specific effects; or, lastly, the poison lies dormant for a time, and then, becoming suddenly active, makes a morbid impression on the nerves of the part, which is propagated along their course to the brain and spinal cord, the poison being simultaneously absorbed into the blood, although its absorption be not the essential condition of its activity. The last of these hypotheses appears to us to agree best with the phenomena of the disease, and with what is known of the modus operandi of poisons in general, but we do not wish to be understood as adopting this or any other hypothesis; our only object in these remarks is to show that several opinions are tenable, and therefore none conclusive. Such being the state of the case, it is also uncertain whether the changes observed on dissection are to be regarded as the secondary specific effects of the poison, or merely as the effects of disordered innervation on the vascular actions of the parts. When we consider the similarity of the morbid appearances in hydrophobia and tetanus, and their joint resemblance to those common in most cases of violent and rapidly fatal disease, we are the less inclined to suppose that the changes discovered in bodies which have died of hydrophobia are referrible to the specific action of the poison. We must also remark that our author's notion of their

being *secondary* effects, which would of course restrict them to cases of a certain duration, is hardly borne out by a reference to the instances on record, for in some of these the appearances in question have been observed after a disease of very short duration.

There is a question of infinite practical importance which has also a powerful bearing on the pathology of hydrophobia, namely, whether the excision of the bitten part, before the appearance of the symptoms, is or is not certainly prophylactic of the disease? Dr. Williams decides in the negative.

"It may be said that many patients on whom excision or cautery has been performed have escaped hydrophobia; but it is also equally certain that many persons who have submitted to these operations within a very short time after being bitten have, nevertheless, fallen victims to the disease. In a late instance at St. Bartholomew's Hospital, the man had all the bitten parts removed by the knife, and yet died of hydrophobia. A case is also given by Manière, in which actual cautery was promptly used, and to such an extent that the inflammation which followed required a number of leeches to reduce it; yet the patient, though she lived to be pregnant and to miscarry, subsequently died of hydrophobia. Mr. Rogers gives a case in which a patient was bitten by a rabid dog, under such circumstances that cauterization by the argentum nitratum was immediately employed, and repeated in the course of the two next days. The accident happened in July, and the man died in the October following of hydrophobia. A spaniel having been bitten in the ear by a dog suspected of being rabid, Dr. Bent, of Moorshedabad, placed the ear on a board, and with a scalpel cut out a circular piece half an inch all round the wound, and washed the part well with warm water. All this was done in less than a quarter of an hour after the bite was received, which was on the 26th of December, yet on the 11th of January some alteration was observed in the manner and habits of the animal, and on the 14th it died of hydrophobia." (p. 254.)

We must observe, however, that the mass of evidence in favour of the early extirpation of the part is so great that alleged exceptions should be received with extreme caution. Independently of the fallacies arising from imperfect performance of the operation and mistakes in the nature of the case, it should be remembered in all instances where hydrophobia occurs after the destruction of a bitten part, that the virus may possibly have been applied to some slight scratch in another part of the body which has entirely escaped notice. The agitation necessarily attendant on the attack of an animal believed to be rabid, would be very unfavorable to any minute observation or recollection of what might have happened. With respect also to dogs, and other animals covered with hair, it is evident how easily a small wound might escape observation. On the whole, we cannot admit the scanty evidence to the contrary, as subversive of the conviction held by the highest authorities, and based on the most ample experience, that immediate extirpation of the part is an absolute preventive. We think that the experience of Mr. Youatt alone, who, probably, has had more to do with this disease than any other individual, is almost sufficient to decide the point. He has operated in upwards of 400 cases of persons bitten by dogs distinctly rabid, and not one of them has taken the disease.* No one will dispute Mr. Youatt's competency to decide whether a dog be rabid or not; and whichever of the various estimates we adopt of liability to infection after the bite, it is impossible to explain

* Mr. Youatt destroys the part with lunar caustic. We should prefer excision; but the thorough destruction of the part, in whatever way, is the main object.

the immunity of so large a number without a single exception on any other principle than that of the efficacy of the practice. We are much inclined to believe, with Sir A. Cooper, Travers, Hodgson, and others, that the destruction of the part at any time before the actual development of the disease is perfectly effectual. This point, however, not being certain affords a most important subject of enquiry, and every case that can bear upon it should be most diligently recorded. It is no less important in a theoretical than in a practical light, for its decision in the affirmative would involve not only the certain means of safety to the patient, but also an *experimentum crucis* as to the fixation or diffusion of the poison during its latent state.

On the possibility of discovering a prophylactic against the hydrophobic poison, when in its latent state, our author has, we think, been led to a premature conclusion by one of his own general laws. On a former occasion we expressed a doubt of the validity of the law that morbid poisons "are not acted upon by medicinal substances as long as they continue latent." The question, we observed, is "of great interest and importance, although it is one which it must be almost impossible to answer; since the only evidence of a latent period having existed is when that period has terminated."

It must be confessed it is not easy to get hold of anything either in the way of confirmation or refutation; but it just occurs to us that there is one disease arising from a poison which has a sort of bearing on the subject, namely, *ague*. The poison has here the remarkable peculiarity of being alternately active and delitescent: now there is not the least doubt that quinine, given during the intermission (latent state of the poison), will cure the disease. We admit it may be objected that the patient, even during the intermission, is still under the influence of the poison, as evinced by lassitude, &c.; but we merely give this example for want of a better, and as the only one we can hit upon that has any relation to the subject. As far as it goes it makes rather against Dr. Williams's law. At all events such vague generalities should never be allowed to damp our practical researches, and utterly worthless as we believe all known medicines to be in the prevention or cure of hydrophobia, we think it by no means impossible that there may be in nature both a prophylactic and antidote for this horrible disease.

With respect to the origin and propagation of hydrophobia, Dr. Williams states that as far as our knowledge extends, animals of the canine and feline races are alone subject to spontaneous hydrophobia; that in the dog, fox, wolf, and jackall, the disease may arise either spontaneously or from inoculation; that the same is the case with the cat, which is the only feline animal at present known to have this two-fold liability; that the above-named animals, when labouring under hydrophobia, howsoever contracted, generate a poison capable of communicating the disease to man, to every domesticated animal whether bird or beast, and probably to all warm-blooded animals; that those animals in which the disease never originates spontaneously, do not secrete the poison, and that hence, though themselves susceptible of the disease, they cannot propagate it. Though we think it not unlikely that all warm-blooded animals may be susceptible of hydrophobia, we must protest against our author's direct affirmation of the susceptibility of all domesticated birds

and beasts. With reference to many of these there is nothing on record to determine whether they are susceptible or not, and we hold it to be of great importance not to take anything for granted on this subject, but to ascertain with scrupulous exactness the relations of the poison in question to the constitutions of as many distinct species of animals as possible, because the conditions of susceptibility may hereafter throw light on the nature and mode of action of the poison. We agree with Dr. Williams in attaching no weight to the unsupported experiment of Magendie and Breschet, in which hydrophobia is alleged to have been communicated by inoculation from a man to a dog. It is much more probable that the dog was previously infected from some other source, than that a result should have been obtained so opposite to those of all former experiments of the like nature. The shadow of doubt, however, thrown by this experiment on the established belief renders it desirable that the question should be set finally at rest by a sufficient number of carefully conducted trials.

The succeeding essay is on the subject of *plague*. Dr. Williams enters at considerable length and with much judgment into the origin of this disease. Clot Bey believes it to originate and to be endemic along the whole eastern and southern coast of the Mediterranean, the principal centres being Egypt, Syria, and Constantinople; the intensity of the disease diminishing as we approach Greece and the Adriatic on the one side, and Barbary and the Straits of Gibraltar on the other. Dr. Williams observes that further evidence would be necessary to prove so extended an origin; but that all authors are agreed that Egypt does give origin to the plague, and most of them consider it as the great and primary, if not the sole source, of the morbific miasm. There seems also reason to believe that the generation of the poison is limited to certain very circumscribed portions of Egypt. This is the opinion of Clot Bey, who observes that the plague is more rare in Upper than in Central Egypt, and in Central than in Lower Egypt, and more frequent on the coast of Syria and the shores of the Bosphorus than in the interior of Asiatic or European Turkey. Admitting the origin of plague in certain limited districts of Egypt, two hypotheses, says our author, have been advanced to account for the poison which produces it. The one is that it is engendered among the lower classes of the people, who live in a state of extreme filth and misery, and produces a disease propagated solely by contagion; the other is that the poison, however generated, exists in the atmosphere, and produces a highly contagious disease, or a disease in which the body of the patient evolves a poison which is both infectious and contagious. After enumerating the various sources to which the origin of the plague has been referred, Dr. Williams concludes:

"It is probably in vain further to attempt to penetrate the obscurity in which the remote causes of this disease are involved, or to assign a sufficient reason why this disease, unknown, as it is conceived, in the days of the Pharoahs and of the Ptolemies, has continued to rage for the last 1300 years with unabated violence in Egypt and perhaps in the neighbouring countries. It seems certain that the geological structure of Egypt, the overflowing of its river, and the conditions of its atmosphere have undergone no change. It must be admitted, however, that the husbandry of the Egyptians has undergone a most remarkable alteration; the cultivation of rice having succeeded to that of corn, and so also have their manners and habits. The squalid misery and mud-built towns of the

present day, forming a strong contrast with the many magnificent and stupendous monuments which remain to attest the former luxury, opulence, and splendour of the cities of ancient Egypt. The poison of the plague, therefore, like that of the smallpox, the scarlet fever, or the measles, seems to be engendered by the action of physical causes as yet unappreciable. But they must be permanent in Lower Egypt, for sporadic cases prevail all the year round in that district. The space in which they are extricated, however, it has been shown must be limited to narrow bounds, for this disease is rare in Upper Egypt, and has never been known to pass the first cataracts. The hospitals, likewise, which were formed in 1834-5, along the borders of the desert, and many regiments encamped in that position almost entirely escaped the attacks of the plague which raged on the banks of the Nile. It was remarked also that several villages suffered little loss in that epidemic, although in the immediate neighbourhood of Cairo, where the disease was terrifically fatal." (pp. 267 8.)

There is nothing so peculiar in Dr. Williams's opinions respecting plague as to demand any special notice, and we must therefore content ourselves with recommending his article as a very full and able review of what is known on the subject. We may at the same time deduce from it a justification of our remark that Dr. Williams sometimes bestows the name of *laws* on certain facts and phenomena sufficiently well known under less emphatic denominations. It is admitted that the plague is produced by a poison; what then are its laws? The passage just quoted sufficiently shows that we know not the manner, nor even the circumstances in which the poison is generated. Are we any better acquainted with the causes which influence its activity, and convert the endemic disease of certain districts into a wide-spreading pestilence? Is the mode of its propagation from one individual to another distinctly ascertained, or is it absolutely certain that the disease is contagious at all? Do the symptoms succeed each other in any order which can be considered as at all determined? Are the characters of the eruption or the textures in which it appears in any degree uniform? Or does the eruption, in whatever form it may present itself, observe any definite duration or hold any distinct relation to the symptoms? All these questions, we fear, must be answered in the negative, and, if so, it is evident that we know nothing of the laws of the poison, and that our author in attempting to unfold them has merely given us a history of the disease.

We have now to consider *cellulitis venenata*. By this term Dr. Williams designates the disease which results from punctures received in dissection or any other inoculation with a certain virus existing in the dead body. He observes that there is great difficulty in determining whether the poison producing this disease be uniformly the same and a simple product of animal decomposition, or whether it be a product of the disease of which the patient has died, and variable according to the nature of that disease. He concludes, however, that there is not a variety of poisons but one peculiar and specific poison. This he conceives to be proved by the uniformity of the phenomena resulting from punctures received in the examination of bodies which have died of the most opposite diseases, and of bodies which have not died of any disease at all, as those of slain animals. Dr. Williams notices in illustration the case recorded by Dr. Spurgin, of a cook-maid who received it from the body of a stale hare, and another in which the injury was received in

hanging up a piece of fresh meat. He then cites a case given by M. Morand, (Hist. Acad. Royale des Sciences, 1766, p. 54.)

"A large ox, unable to travel (mal à butin), was killed and cut up by a butcher, who put his knife for a short time into his mouth, and was soon after seized with swelling of the tongue and throat, and also with universal gangrene, so that he died on the fourth day. An innkeeper pricked his hand with a bone of the same ox, and a livid tumour formed on the part, the arm sphacelated, and he died on the seventh day. Some drops of the blood of this animal, also, fell on the hand of his wife, and the hand swelled and a tumour formed, which she had great difficulty in getting cured." (p. 334.)

Another example is adduced from Rust's Magazine in which ten individuals died of anthrax, in the district of Merseberg, in the year 1822, and it was ascertained that several of them had been employed in skinning sheep which had died of *blutseuche.** The cases here cited from the French and German works are, we think, not at all to the purpose: there is no mention of any puncture or abrasion which, generally speaking, seems essential to the production of the disease under consideration, and the cases are probably referrible to the head of those obscure animal poisons accounts of which are scattered through medical writings, and which are evidently distinct from that generated by simple animal decomposition. Dr. Williams coincides in the opinion, fully justified by the experience of anatomists, that a body recently dead is much more dangerous than one in an advanced stage of putrefaction. We may observe, in passing, that this is worth keeping in view, in relation to the question lately so much agitated, of the influence of animal putrefaction on health; for it suggests that such influence may be very various according to the different stages and circumstances of the process, and that the diversity may extend to the exhalations from the body, as well as the fluids contained within it.

Dr. Williams's view of the pathology of the affection seems to be fairly deducible from an attentive consideration of its phenomena.

"The theory of this disease is, that a poison, whatever be its intimate nature, is absorbed and carried into the circulating torrent, and after a short period of latency, usually occasions only a diffuse inflammation of the wounded part, without any serious affection of the constitution. In other cases, however, in addition to the diffuse inflammation of the part or limb, a severe form of fever is added with extreme prostration, coated tongue, and disturbed alimentary functions, and as the disease proceeds, abscesses are often formed in various parts of the body, remote from the original wound; usually beneath the great pectoral muscle, although not in the course of the absorbents leading from the hand to the subclavian vein. The poison therefore acts locally on the punctured limb, on the cellular tissue generally, and also on the great nervous centres, producing the phenomena of fever. The local phenomena, when the poison is of sufficient intensity to produce disease of any moment, are inflammation of the punctured part, involving not only the hand, but also the arm, and oftentimes extending as far as the axilla. A more intense form of the disease, however, is when the inflammation of the punctured part is slight; but severe inflammation commences in the axilla, extending over the neck and down the side, and sometimes attacking remote and even opposite parts of the body. This inflammation may terminate by effusion of serum, by suppuration, or by gangrene." (pp. 337-8.)

* *Blood-pestilence;* called by English veterinarians *the blood,* or *blood-striking.* It is analogous to the *quarter-evil* of young cattle.

The phenomena of cellulitis venenata are illustrated by a variety of cases, none of which, however, are derived from the author's own experience. His remarks on the controverted treatment of this affection leave us in the dark as to that which he would himself prefer. He observes, with truth, that slight cases generally do well, while in those of a severe kind which have been recorded, one half of the patients have recovered and the other half have died. Under these circumstances he does well, we think, to suspend his opinion, which we also beg leave to do, intimating at the same time a suspicion that a more decided use of stimulants and opiates from the commencement might have succeeded in some cases where they failed from being used only after antiphlogistic treatment had been tried ineffectually.

Dr. Williams next treats of the "poison of farcinoma," and gives, under this head, an excellent review of what is hitherto known concerning glanders, whether in the equine animals or in man. The subject not demanding any particular notice from us at present we pass to that of "the poison of porrigo." The author's delineation of this disease is very good; but we cannot yield an unlimited assent to his pathology.

"The theory of this disease is, that the poison is absorbed and infects the blood, and after a given period of latency produces a pustular eruption of a given character on the part of the scalp to which it is applied, and subsequently, perhaps, on the whole scalp. A similar eruption sometimes appears on other parts of the body to which the poison may have been immediately applied, but not otherwise. The proof of the blood being infected in this disease is, that there are cases in which the head has been shaved and carefully washed for many months, and each favus destroyed by lunar caustic as soon as it has appeared, yet the whole scalp has ultimately been covered by them, and, as far as could be judged, without any direct application of the poison." (pp. 402-3.)

This reasoning is surely very inconclusive. In the first place our author takes for granted, what has never been proved, that porrigo may not be generated in the individual, independently of all contagion; and, secondly, supposing the disease to be always the result of an extraneous poison, may not this poison be local in its operation? and may not a morbid action caused by a poison be propagated by the sympathy of contiguity like any other diseased action? It appears to us that our author has been led, by the too implicit adoption of an exclusive theory of the operation of poison—that of their absorption into the blood—to lose sight of one of the most interesting questions connected with these agents, namely, their *localization.*

The diversities of medical experience are truly curious. It is notorious that scald-head is a disease from which the doctors in general derive very little credit, and which is considered particularly intractable. Dr. Williams however states that during the twenty years he has been attached to St. Thomas's Hospital he does not remember a single case in which the treatment adopted has failed. We believe we may say that we have been equally successful in all the cases which have occurred to us for some years past. The following is Dr. Williams's account of the treatment which has been attended with such happy results:

"The London Hospitals do not, in general, admit cases of porrigo into their wards, yet in the course of a year, the number received is, notwithstanding, considerable; and the practice adopted by Drs. Roberts, Powell, and Haworth,

while I was a student at St. Bartholomew's Hospital, in every case of porrigo, whatever the stage or form of the disease, was as follows:

"They first directed the head to be poulticed till all the scabs were removed, and this being effected, they shaved the head, and applied the unguentum picis liquidæ over the whole scalp, which they directed should be washed off night and morning with soft soap and water, and the ointment to be repeated. The patient was also to wear an oil-skin cap, and his head to be shaved twice a week. This treatment was so universally successful in their hands, that I have adopted it during the twenty years I have been attached to St. Thomas's Hospital, and I do not remember one instance in which it failed. Indeed, the only improvement I have been able to make on it has been in cases in which the favi are still unbroken, or the incrustation but trifling, to wash the whole scalp night and morning with the oleum terebinthinæ purificatum, by means of a common shaving brush, taking care to prevent its running into the eyes." (pp. 411-12.)

For our own part, it was repeated observation of the failure of all set plans of treatment that induced us to treat porrigo as we now do with uniform success, on the ordinary principles of medicine; that is, by applying sedatives when the parts are irritable, and stimulants when they are indolent; trusting to topical means when the disease appears to be dependent upon local causes, and exhibiting constitutional remedies where the general health appears to be deranged. The last-mentioned consideration is too little attended to, and we can affirm from experience, that where porrigo occurs in weakly and cachectic children, alteratives and tonics will go further to cure it than any local means whatever. We have found sarsaparilla particularly useful in these cases.—The doctors in general, then, fail continually in curing porrigo; Dr. Williams always cures it by observing a plan; and we always cure by eschewing all plans.

The succeeding essay is on "the paludal poison." It is by far the longest in the book, and seems to us to be of very unequal merit. It is divided into two portions, the first treating of paludal fevers, and the second of dysentery.

We consider our author's remarks on the generation of the marsh poison so ingenious that it was our intention to have given a recapitulation of his general conclusions respecting it. We find, however, that our space will not admit of it, and we must therefore be content with recommending this portion of the work as a good example of the manner in which such enquiries should be conducted.

The various forms of marsh fever are well illustrated; the author, however, has made no mention of that highly congestive form which has obtained the name of febris algida, *fièvre algide*. The strong analogy of this to malignant cholera renders it an object of particular interest. It is, we believe, the only disease except cholera in which the pulse is frequently extinct for many hours before death, and the temperature after death sometimes exceeds that of the body while alive.

In the article *dysentery*, Dr. Williams adopts two fundamental principles which are so obviously erroneous that it would be futile to follow up his reasoning. These are, first, that the paludal poison is always the remote cause of dysentery; secondly, that to produce dysentery the poison must be applied in a dose less than that which produces the mildest form of paludal fever. That dysentery is a very frequent disease in countries infested with malaria no one will dispute, but that malaria is the sole cause cannot for a moment be admitted. It is in the face of all

observation, and it is curious enough that Dr. Williams should furnish us with an excellent confutation of his own doctrine. Speaking of the influence of diet, he says:

"At St. Helena, more than one third of the admissions and nearly two thirds of all the deaths among the troops have been from diseases of the stomach and bowels; *of these dysentery is the prevailing form, and is even more severe than in the West Indies; yet in vain do we seek for any peculiarity in the climate or locality to account for it.* In consequence of the repeated representations to which the frequency of this disease gave rise, a board of medical officers was, in October, 1836, directed to investigate the subject, who came to the conclusion that the health of the troops had been manifestly impaired by the constant use of salt rations. Two days' fresh provisions per week were in consequence ordered for the troops, with the privilege of exchanging a portion of their salt meat for fish or vegetables. The beneficial effects of this alteration was shown by the cases of visceral obstructions being reduced to half their previous amount in the course of the following year, *and now they are said to be comparatively rare.*" (pp. 546-7.)

The grounds on which our author adopts his notion of the relative doses of paludal poison necessary to produce dysentery and fever are so truly singular that we regret that we cannot afford space to transcribe them. But they are utterly invalid.

The next subject is *Cholera Indica.* Dr. Williams has given a very good essay on the subject, keeping generally close to the facts, and reasoning on them with ability. With respect to the theory of the disease he falls into his favorite train of thought, and concludes that the morbid phenomena are the result of a poison absorbed into the blood, on which all we have to say is that it may be so for anything we know to the contrary.

The only remaining subject is "the poison of influenza." Dr. Williams's observations on this disease will very well repay the trouble of perusal, though they are imbued with the theoretical spirit which is too prominent throughout the work. He seems less certain about the laws of this poison than those of some others; and as this article has extended to a considerable length we will waive a subject on which our remarks might not perhaps tend greatly to edification.

Before dismissing this work it is our unpleasant duty to animadvert on the defective style in which it is written, and the manifest carelessness with which it has been allowed to pass the press. Some slight instances will be found in the few passages we have extracted; and one cannot read many consecutive pages of Dr. Williams's book without encountering some clumsiness of diction, if not some absolute solecism in grammar. We notice a few of these, opening the volume almost at random, to show that we are not unjust or captious in our remarks. At p. 251 is the following sentence: "The patient at the time of the operation is represented as being furiously insane, and his mind so overthrown as to require to be confined in a straight waistcoat," i. e. the patient's *mind* required to be confined in a straight (strait-) waistcoat. At p. 216 we meet with the novel term *parotiditis.* At p. 232 we read "the dog's tooth is indeed "*a fomites.*" At p. 360 we find that "Dr. Osborne has proposed pledgets dipped in the *Træ cantharides;* and we may observe that the word tincture is continually put in the genitive where it ought not to be. At p. 365 we meet with *veterinists* instead of *veterinarians;* and throughout the work we find the poisons capable of coexisting with others designated by the term *Coexists*—certainly one of the most extraordinary substantives

ever hatched. Then we find twice within the space of half a page the words *bubo d'emblée* instead of bubon d'emblée, *principle* for principal, *suffosis* for suffossis, and such like. We must observe, also, that several quotations are stultified by misprints or wrong references.

All these blemishes, and many more of the like description, we hope to see removed in the next edition of the book, which we shall be very happy to see it attain. Taking its excellencies and its faults together, and we have endeavoured to indicate both according to the best of our judgment, we have no hesitation in recommending Dr. Williams's work to all who are interested in the philosophy or practice of medicine.

Art. V.

1. *Monographie der Puerperalkrankheiten.* Von Theodor Helm, Dr. der Medicin, Chirurgie und Geburtshülfe, emerit. Assistenten am Wiener-Gebärhause, &c.—*Zürich*, 1839. 8vo, pp. 152.

Monograph on Puerperal Diseases. By Theodore Helm, m.d. &c.—*Zürich*, 1839.

2. *Die Krankheiten der Wöchnerinnen nach den in der k. k. Entbindungsanstalt und im allgemeinen Krankenhause zu Prag gemachten Beobachtungen.* Von Franz Kiwisch, Ritter v. Rotterau, Doctor der Medicin und Chirurgie, Magister der Geburtshülfe, Assistenten und Secundärarzte an der k. k. Entbindungsanstalt. Erster Theil—*Prag*, 1840. 8vo, pp. 319.

The Diseases of Women in Childbed, from Observations made at the Lying-in Institution and General Hospital at Prague. By F. A. Kiwisch, m.d., &c.—*Prague*, 1840.

The above essays on puerperal diseases are valuable as being the results of experience gathered at two of the largest midwifery hospitals upon the Continent, those of Vienna and Prague; Dr. Helm having derived his materials from the former, and Dr. Kiwisch from the latter. As the two works, although on the same subject, are very different, we shall notice them separately, and in the order in which we have transcribed their titles.

I. In applying the epithet "peculiar" to Dr. Helm's work, we believe that we shall gratify the author's feelings much more than if we had made use of a term which was more decidedly complimentary. We regret to say that from its very first page it bears the stamp of an affected eccentricity, which tends not a little to impair its value, and cannot fail to diminish the respect of the reader for his author, and weaken his confidence in him. Dr. Helm has evidently seen much practice, and appears to possess ample materials for writing a valuable book upon the subject, but from a seeming anxiety to produce an effect and astonish his readers, he has endeavoured to bring forward dogmas which his own observations in almost every page disprove, and which are entirely at variance with the best established knowledge of the present day.

From want of clear notions on the subject of fever, Dr. Helm is led to consider post-mortem examinations as the only means of ascertaining the onset, course, and termination of any general disease. All other methods according to him are incorrect, for "they erect a great scaffolding of

symptoms about nothing," (Introd. p. xii;) he therefore warns his readers not to expect any minute detail of symptoms, as this will only be required when new forms of disease present themselves.

"One puerperal disease during its progress frequently calls another into action. Thus uterine phlebitis frequently results from septic inflammation of the mucous membrane of the uterus. If gangrene of the vagina and uterus penetrates to the peritoneum it produces peritonitis. Puerperal diseases bring in their train many other diseases. These must not be looked upon as puerperal diseases, for they are neither primary, nor does their appearance or cause present anything peculiar. Thus metastatic lobular pneumonia frequently appears as a consequence of puerperal uterine phlebitis. In inflammation of the brachial vein or other large venous trunks, this species of pneumonia arises and advances in the same manner," &c. (p. 66.)

The author considers that these "secondary diseases," therefore cannot be regarded as puerperal diseases. False reasoning and deductions are evident throughout the whole quotation. Uterine phlebitis and septic inflammation of the lining membrane of the uterus arise from the same cause; they can therefore scarcely be said to produce each other; the same holds good with uterine phlebitis, and the above-mentioned form of pneumonia, nor is it invalidated by the collateral circumstance of inflammation of the brachial vein being also followed occasionally by pneumonia; in both cases of phlebitis the vein has been inflamed by the contact of a morbid animal fluid, which when carried into the circulation has acted as a poison to the blood, and has been followed by one of those violent efforts of the system to throw it off, by inducing inflammation of some internal structure, especially of a mucous or serous surface, which we see in the ordinary experiments of injecting a poison into a vein. We might as well assert that coryza is capable of producing a rubeloid eruption, or sore throat a scarlet rash, because under circumstances of infection the same cause which has produced one symptom has also produced the other.

After the above quotation, the author suddenly comes to the climax of his views, namely, that there is no such thing as puerperal fever, but there are such things as puerperal diseases.

"These are changes which arise from a morbid alteration of organs, and which pathological anatomy alone is capable of revealing to us: in these organic changes consists the essence of the disease," &c. &c. (p. 7.) . . . Not only do not the different puerperal diseases admit of being classed under one common name of puerperal fever, there is not even a single form which answers to this name, and therefore, for this reason also, there is no such a thing as puerperal fever. What can a veritable childbed fever be, but a fever which only appears in puerperal women? but there is not such a fever, and therefore there is no puerperal fever." (p. 9.)

Dr. Helm informs us that

"The puerperal diseases are inflammations of certain organs. (p. 10.) . . . Experience also proves this. So long as minutely injected vessels, the formation of new vessels, flocculent serum, exudation of lymph and pus are considered as the anatomical characters of inflammation, so long are those diseases inflammations which are attended by these appearances." (p. 11.)

We would ask what is the nature of those puerperal diseases which are so rapidly fatal, and which are attended by so few of the above-mentioned changes, and where the extent of these changes seems to be in an inverse ratio to the severity of the attack? Although the author thinks fit to

suppress all mention of such a thing as puerperal fever, he informs us that "the puerperal diseases commence with fever, or are accompanied by it; a puerperal patient cannot be declared convalescent until every trace of the fever has disappeared." (p. 13.) Where fever precedes, attends, and terminates an attack of inflammation, and forms so essential and important a feature in the nature of the attack that the patient cannot be deemed in safety "until every trace of the fever has disappeared," we should be hardly justified in denying the appellation of *fever* to this disease, although it may have been attended during its progress with symptoms of local inflammation; it is therefore not a little unfortunate for the author's theory as to the non-existence of puerperal fever that in the severe species of "puerperal diseases," as he calls them, he is obliged to notice fever not only as being a prominent symptom but as *invariably* preceding the symptoms of the local inflammation. But, after all, the matter is rather one of words than anything else, so long as it is not allowed to influence practice.

We willingly allow that in a few isolated places where Dr. Helm's unlucky crotchet (for we can call it nothing else) does not obtrude itself, his observations are sound and practical. As far as is in our power we will do him the justice to quote these, regretting as well as expressing our surprise that they had not led him involuntarily to form clearer and more correct ideas of the nature of the disease.

He recognizes the sporadic origin of puerperal disease as one of its modes of commencement, and very rightly avoids the error into which others have fallen of endeavouring to assign to it only one mode of origin and propagation. No one has expressed this view of the subject more clearly than Dr. Hannay, of Glasgow, and we may be excused quoting from his little essay on Puerperal Fever, as it has been but little noticed although published in 1827: "Of the contagious nature of this disease," says Dr. Hannay, "much diversity of opinion has existed: some have insisted strenuously that it in no case is communicated by the contagious influence carried from one person labouring under it to another; whilst others refer almost every case to contagion as its source. In these extremes, as always happens, I am inclined to think there is at the same time much error and much truth; for I am induced by the facts I shall detail to infer that the disease may at its origin be sporadic and independent of contagion, and so generated become the source where in epidemic rage it may be communicated by contagion to others."

"The endemic origin of puerperal diseases," says Dr. Helm, "may be explained by accumulation and increased intensity of puerperal miasma and puerperal mephites; which last is capable of increasing even to contagion. The increased cutaneous and pulmonary exhalation of women in childbed, the discharge of the lochia mixed with shreds of decidua always more or less decomposed, the activity of the breasts, produce even with the healthiest patients a peculiar taint of the surrounding atmosphere, which is in continual reproduction, and which a delicate or practised sense of smell can instantly detect on entering a room where a puerperal patient is. We propose to call this puerperal miasma. If many individuals who are excreting this miasma are crowded together into one room, it accumulates in intensity and becomes puerperal mephitis, by the action of which either the disposition which is more or less considerable is only increased, or actual puerperal disease is induced." (pp. 15-17.)

In a note to the above observation he adds, "Between miasma, mephi-

tis, and contagion there is only a difference in degree, and this is frequently determined not less by the period of the disease than by the susceptibility of the individual; so that what acts as contagion in one, in another produces but merely a general impression, or none at all." (p. 17.)

His concluding observation on the subject of contagion is a singular one, and seems to be merely for the purpose of maintaining his notion respecting the non-existence of puerperal fever:

"If we are to believe the assertion of various authors, puerperal mephitis has frequently risen to the degree of contagion in lying-in hospitals. But certainly this occurs very rarely, and at any rate can only take place in the most developed cases of the septic species. For my own part I cannot recollect, even in the most virulent epidemics, a single puerperal patient who could be proved to have either given or received contagion." (p. 19.)

We know not what degree of evidence Dr. Helm may require to make him alter his opinion on this subject; his case appears to be one of oblique vision, a disease which has also affected several of the non-contagionists in our own country. The observations of Mr. Moore upon this subject, and the remarks by this Review, (vol. II. p. 488,) in the notice of his work on Puerperal Fever, are worthy of attention. "The facts," says he, "bearing on the contagious nature of puerperal fever are numerous and forcible. Those writers who have espoused the opinion that this fever is simply the effect of local inflammation are of course opposed to the notion of its being contagious; but if the facts recorded cannot be invalidated, their opposition must prove futile." We may also refer our readers to a subsequent part of the present article, where we notice the same subject in Dr. Kiwisch's work. In both the essays now under notice we might be almost induced to suppose that adynamic puerperal fever had never been witnessed by the authors, and that the cases were chiefly of the sthenic or inflammatory character; but the word "septic" is used too frequently by Dr. Helm to permit this supposition, and we must also do him the justice to say that many of his descriptions are too clear and accurate to allow us to entertain a moment's doubt about it. We should have thought that Dr. Helm's excellent observations on puerperal miasma and mephitis would of themselves have been a sufficient ground to establish the possibility of contagion in cases of puerperal fever, or puerperal diseases as he prefers to call them. In his "general treatment of puerperal diseases," he betrays the same inconsistencies. "The pure antiphlogistic method," he says, "is the only one from which success in the majority of cases can be expected. The course of the disease, or its original character, frequently demand the antiseptic treatment, the actual recovery requires the negative treatment in a high degree." (p. 30.) We willingly agree that the antiphlogistic treatment is the most successful, for it is only in the milder attacks that we are able to use it; but are we justified in calling diseases inflammations, the course of which, "or their original character, frequently demand the antiseptic treatment?" The very word "antiseptic" shows that the treatment is to correct or prevent something of the putrid, typhous, or malignant character; and it seems incredible that, with such admissions staring him in the face, the author should persist in calling puerperal diseases inflammations, and denying the existence of puerperal fever.

Dr. Helm's observations on the construction of lying-in hospitals are excellent:

"A lying-in hospital must have a considerable number of rooms for only a

few patients; and in order to admit of the changes which are so necessary in the institution, it should have a larger number of rooms than are even necessary for the greatest influx of patients. These rooms must be sufficiently spacious, and capable of being easily warmed and ventilated, and after having been used for some weeks should stand entirely empty for some days, and should be fresh whitened twice a year. The transport from the labour-room into the wards should be without risk, and those who are ill must be separated from the other patients." (p. 31.)

Exactly similar opinions have been expressed by Dr. Ferguson in his valuable work on Puerperal Fever.

Dr. Helm's list of what he calls puerperal diseases is as follows: 1st, inflammation of the veins of the uterus, metrophlebitis puerperalis; 2d, inflammation of the mucous membrane of the uterus, metrophlegmhymenitis puerp.; 3d, inflammation of the ovaries, oophoritis puerp.; 4th, inflammation of the peritoneum, peritonæitis puerp.; 5th, inflammation of the vagina and perineum, koleitis and perinæitis puerp.; 6th, inflammation of the mammary glands, mastitis puerp.; 7th, cutaneous inflammation resembling scarlatina, purpura puerp. (p. 32.) And these are all the diseases to which the author thinks fit to apply the name "puerperal."

"The reader will probably miss puerperal mania, miliaria, and phlegmasia dolens. They are not self-existing diseases, but may be induced by many of those already mentioned. There are no other puerperal diseases, and much as has been talked and written about puerperal typhus, the various puerperal fevers, puerperal meningitis, &c. they do not exist." (p. 33.)

The anatomical characters of the uterine phlebitis are well given:

"The caliber of the inflamed veins is frequently enlarged to the thickness of several goose-quills, and in isolated spots so much so as to admit of the little finger; so that, without close examination, we might be led to the supposition that we had opened an abscess, were not the inner surface of the cavity continuous with that of the vein, and followed its course in both directions. Usually speaking, some veins at the spot where the placenta was attached suppurate first, the other larger ones are plugged with coagula; pus is also frequently found at the beginning of the disease in the veins at the sides of the uterus. But where it has lasted some time most of the veins of the cervix, body, fundus, broad ligaments, fallopian tubes, and even ovaries, are filled with pus and partially inflamed. If the above-mentioned abscess-like dilatations of the veins are situated near to the peritoneal surface of the uterus, they produce a brownish discoloration of it, and on making an incision into the part it will be followed by a free discharge of pus and sanies (Jauche). In many cases the uterus is so traversed in all directions by suppurating veins, that it has the appearance and consistence of a sponge, its substance in every part so altered as to be capable of being easily rubbed down into a dirty paste." (p. 34.)

Dr. Helm, on several occasions, recognizes the possibility of pus becoming mingled with the blood in cases of long-standing phlebitis, but the vitiation of the blood by putrid animal poison never seems to strike him, and were it not for the documents left us by Boer respecting the character of puerperal epidemics at Vienna, and also his admissions in different parts of the work, a superficial reader might also be induced to fancy that Dr. Helm had not met with a case of genuine adynamic fever. At any rate he describes appearances which are by no means common; thus, among the internal and external metastases, the order of frequency with which certain changes take place is by no means the same as is usually observed with us, or that observed by Dr. Kiwisch at Prague.

"Most of the organs of the different cavities are exposed to purulent deposits in uterine phlebitis; they are seen most frequently in the lungs, not so frequently in the spleen or liver, rarely in the brain or in the kidney, and rarest of all in the heart and eye." (p 39.)

We formerly stated, in our review of Mr. Moore's work on Puerperal Fever, our conviction that uterine phlebitis is produced, generally at least, by the action of an animal poison; in our notice of Dr. Kiwisch's work we shall take the opportunity of stating why it is so frequently preceded by symptoms of adynamic puerperal fever.

"In like manner as the internal organs are subject to such deposits, so are also the external ones; thus they are frequently found in the thyroid gland, still more so in the large salivary glands. Pus is very commonly contained in the different joints of the body, frequently in the symphyses of the pelvis. The metastases to the skin appear either as bullæ of pus beneath the epidermis, or concentrated under the form of infiltrations of the subcutaneous or intermuscular cellular tissue." (p. 41.)

The first two appearances are rare; all the others are well known to be not uncommon results of malignant puerperal fever.

The symptoms of uterine phlebitis, as enumerated by Dr. Helm, show too clearly that in spite of his preconceived notions as to the non-existence of puerperal fever, he cannot help admitting its presence every now and then. We quote it as a very fair picture of commencing puerperal fever:

"Usually on the second or third day after labour, frequently not before the third or fourth week, the patient begins to be feverish; sometimes the attack is preceded by shivering, sometimes not. Sometimes abdominal pain accompanies the fever, and examination points out the uterus as the painful organ. Sometimes the patient is not aware of the pain until the examination has taken place; frequently there is no pain at all: it may, as well as the fever, be very trifling, or it may rise to a great degree of intensity. The patient frequently complains of headach, heat, and thirst; nevertheless it not unfrequently happens that at the beginning of the attack there is not a single symptom besides the feverish pulse, and if the diagnosis be made too soon, it may easily be mistaken for oophoritis, or peritonitis (which can also begin without any pain) and for scarlatina puerp.; yet not for long; although it cannot be denied that not unfrequently phlebitis affords no sign whatever of local suffering, and it is only in the further course of the disease that the diagnosis can be decided." (p. 43.)

There is nothing more in this description, nor in what follows, beyond the ordinary commencement of puerperal fever before the local symptoms have been produced; it may be the peritonitic or gastro-enteric form, as well as phlebitis, according to the part on which, in the language of Dr. Ferguson, the disease is about to spend its chief virulence. Faulty as the author's views are respecting the non-existence of puerperal fever, we can scarcely consider them more erroneous than the opinions of those who affirm puerperal fever to be simply phlebitis, &c.; thus confounding one disease with another; putting the subject in a false light, and involving it in great confusion.

Dr. Helm considers that rigors coming on at rather an advanced stage of the disease are a characteristic mark of uterine phlebitis:

"Patients may continue to have fever from eight to ten days without the presence of any other morbid appearance. All at once the woman is seized with a rigor, followed by a second and third: these confirm the diagnosis; they do not indicate the commencement of suppuration, but show that pus has been carried into the circulation." (p. 45.)

Rigors at this stage of the disease are by no means characteristic of uterine phlebitis, as it is frequently met with where they have never appeared, and vice versâ. A violent rigor on the second or third day after labour, followed by flushing, headach, a quick and usually feeble pulse, which maintains a rate of above 120, is a far more suspicious symptom, for it indicates the incipient vitiation of the circulating current by an animal poison; and although not an invariable symptom, is one of the most frequent, and certainly the earliest warning of incipient puerperal fever, whatever may be the form of "puerperal disease," or local inflammation which may afterwards result.

"The rigors frequently simulate a regular type, although they never acknowledge a periodical regularity; sometimes there are intervals of complete apyrenia, at others one attack runs into the other. During the attacks the various metastases take place, which usually in their extent stand in direct relation with the number and violence of the febrile attacks." (pp. 46-7.)

We agree with Dr. Helm in denying that phlegmasia dolens is inflammation of the crural vein, although we cannot accede to his opinion of its being inflammation of the surrounding cellular tissue. In this respect we agree entirely with Dr. Kiwisch, viz., that it is inflammation and obstruction of the lymphatics usually where they enter the femoral ring. We willingly allow that inflammation of the cellular tissue surrounding the crural vein will in most cases produce a similar condition of the numerous lymphatic trunks which perforate that layer of it (the fascia cribriformis) which fills up the femoral ring, and that as the cellular tissue about the vein is almost necessarily inflamed when the vein itself is, it will be evident that in cases of crural phlebitis we shall also have phlegmasia dolens; but the converse does not hold good, for phlegmasia dolens can distinctly occur without a trace of crural phlebitis.—We shall notice this subject again in our review of Dr. Kiwisch's volume.

Dr. Helm considers that uterine phlebitis may arise in three ways:

"Firstly, the blood which remains in the veins of the uterus where the placenta had been attached, separates into cruor and lymph, and instead of closing each by a solid plug, the latter of these passes into putrilage, and thus excites inflammation of the inner surface of the veins. Secondly, the contact and absorption of the malignant fluid which is secreted during septic inflammation of the mucous membrane of the uterus induces inflammation and suppuration of the uterine veins. Thirdly, the uterine veins frequently become inflamed without our being able to assign one of the above-mentioned sources as the cause; perhaps it may arise from mechanical injury. The separation and expulsion of the last portions of decidua and placental fibres which have remained adhering to the inner wall of the uterus, take place with more or less putrescence in every puerperal patient; by increase of this, septic inflammation of the mucous membrane of the uterus may be induced. As soon as the putrid secretion, which is thus formed, comes in contact with the veins and is absorbed by them, phlebitis instantly commences, only much more rapidly, because the action of the putrilage is much more intense, and the metrophlebitis then also assumes the septic character. Severe contusions of the uterus or vagina, which have become gangrenous, may give rise to this disease. This mode of commencement occurs much less frequently than the first. The third is the rarest of all." (pp. 58-9.)

Dr. Helm's prognosis of uterine phlebitis is very unfavorable, for it is nothing more or less than that of adynamic puerperal fever:

"As a general rule the disease affords but an unfavorable diagnosis, for even in its mildest attacks a large proportion die; in violent epidemics four die out of

five, and even nine out of ten. Cessation of the pain, with continuance or even increase of the fever is a very bad symptom. Cessation of the fever and rigors, even if the pain continues, improves the diagnosis greatly. Repeated attacks of the characteristic rigors, as well as any metastases give a bad prognosis, for they indicate the violence and extension of the disease. Lobular pneumonia, mania, puerperal physiognomy, are especially unfavorable. Jaundice and softening of the stomach are the worst symptoms of all." (p. 69.)

Uterine phlebitis uncomplicated with puerperal fever is not so fatal a disease as the author states, if promptly and judiciously attacked; it is only where the circulation has become extensively vitiated before the mouths of the uterine veins had been closed by the process of inflammation that we see uterine phlebitis attended with such fatal results. It is these "violent epidemics," not of venous inflammation but of malignant adynamic puerperal fever, which spread such devastation, especially in lying-in hospitals. We feel confident that every unprejudiced practitioner of any experience will agree with us in saying that the local symptoms, whether of uterine phlebitis or peritonitis (and they are generally complicated with each other), are almost always alleviated or removed by the proper treatment, if quickly and energetically applied; the pain ceases, the incipient tympanites subsides, the patient declares herself comfortable and well; but the mark of a vitiated circulation, and therefore of danger, still remains, viz. a quick small pulse, of at least 120, and frequently much more in the minute; the hippocratic change in the features, which the author has denominated puerperal physiognomy, now gradually steals on, collapse becomes more and more apparent, and thus she sinks. In the worst cases there is this appearance at the outset of the disease, for it is a state of collapse from the very beginning.

In giving the results of dissection in cases of puerperal peritonitis, Dr. Helm states that, besides the inflamed state of the peritoneum there is frequently "contemporaneous pleuritis, pericarditis, meningitis, gangrene of the lung, softening of the stomach, caries of the pubic cartilage, abscesses beneath the skin and beneath the muscles; lastly, serous or purulent infiltration of the subcutaneous or intermuscular cellular tissue." (p. 100.) These, and many other more-commonly-seen affections are most truly contemporaneous with the peritonitis, for they arise from the same cause, viz. puerperal fever.

"Softening of the stomach is characterized by its mucous lining being converted into a blackish-brown gelatinous paste; in the worst forms all the coats of the stomach are implicated. It is usually seen in the large curvature; its walls are frequently perforated. The softening frequently extends not only over the larger portion of the stomach, but the diaphragm, œsophagus, even the pleura and lungs, implicated in the process of softening, are converted into the same mass and perforated. That the various ruptures of the stomach, diaphragm, and œsophagus, have not occurred after death or during the last moments of life, is proved by the incipient inflammatory reaction about the above-mentioned spots, as far as the coffee-coloured fluid and softening have extended in the thoracic and abdominal cavities." (p. 101.)

Dr. Helm's summary of the effects of puerperal peritonitis, when not immediately fatal, are interesting:

"If death does not quickly ensue after effusion has taken place in cases of puerperal peritonitis, either recovery quickly takes place by absorption, or the disease takes on a chronic form. In the latter case absorption takes place either with continued fever and no metastases, or with the formation of metastases; the effusion makes its way through the abdominal cavity; the lymphatic

exudation is converted into purulent or tubercular deposit, finally dropsy and obstructed nutrition, or death from exhaustion." (p. 43.)

The author's treatment in puerperal peritonitis where it is not, as he calls it, "septic," consists of general and local bleeding, according to the severity of the attack, with ice fomentations and mercury in large doses; "the septic form of puerperal peritonitis," he says, "defies all treatment."

"Nothing is capable of relieving pain and fever so quickly (the former almost instantly), as ice fomentations spread over the abdomen, but they must be diligently changed and continued long enough, viz. two, three, or more days." (p. 141.)

In recommending the use of mercury he advises that it should be freely rubbed in, both on the abdomen and thighs, and considers that it has frequently been attended by the best results, a fact which we can also confirm. He also praises the application of ice very highly in threatening milk abscess from inflammation, *mastitis puerperalis*, which forms the subject of his last chapter.

"Early and frequently repeated application of the child to the breast, spare diet and caution against cold, are the best prophylactic means of treatment in this disease. But if it has nevertheless come on, the surest means of avoiding or stopping the suppuration which usually comes on so quickly is to apply ice-fomentations to the inflamed breast for at least twenty-four hours. We need not fear the effects of this application, and it is astonishing how rapidly and favorably it acts." (p. 145.)

We have passed over many vague and inconsistent opinions without comment, and can only regret that their frequent or almost constant recurrence have marred the value of what might have otherwise been an excellent essay on the subject; it is only surprising that the author has been able to record such facts and make such observations, and yet with every semblance of candour persist in the assertion that there is no such a thing as puerperal fever. Dr. Helm's work is a good lesson to those who look upon pathology as synonymous with morbid anatomy. Advancing knowledge, increasing experience, and unprejudiced observation have, we trust, long ere this, convinced every open and candid mind that the scalpel is *not* the only mode of investigating disease.

II. Dr. Kiwisch's field of observation has been no less extensive than Dr. Helm's. Although less known than that of Vienna, the Lying-in Hospital at Prague holds a distinguished rank among those of the continent, nearly 1800 women being annually delivered within its walls. This picturesque city contains several other admirable medical institutions, especially an extensive general hospital, and an asylum for lunatics more recently established. The work of Dr. Kiwisch is dedicated to Professor v. Krombholz, a distinguished ornament of the "Prager Universität." The wards under his care present a combination of advantages for students as well as patients, which we have seldom seen equalled, and perhaps never surpassed. Their admirable form and arrangements for ventilation, the scrupulous attention to neatness and cleanliness, and above all, a strict system of clinical instruction carried on in Latin at the bed-side, struck us very forcibly on visiting Prague some years ago. Neither have we forgotten the noble bearing and highly intellectual countenance of the Professor himself, nor his

affable courteousness to strangers; and we can assure those of our medical brethren who are about to travel on the continent, that a visit to the hospital, &c. at Prague will well repay them for so long a journey. With regard to the Lying-in Hospital itself, we will let the author speak for himself:

"The situation of the institution is one of the highest parts of the town, freely exposed to the fresh air which comes over extensive gardens on three sides of it. The wards are sufficiently roomy and light, they are whitened every year, and are constantly ventilated with the necessary caution. Twelve large and five smaller wards are appropriated for the reception of women in labour, and those in childbed. The number of patients in the large wards never exceeds from 5 to 7." (p. 56.)

The author of this volume is evidently a man of great experience; at any rate he has had ample means for becoming so, being assistant-physician to the above establishment, and having also seen the extensive practice of the Lying-in Hospital at Vienna. He appears also to be a hard-working well-read man, and has premised a very elaborate and valuable list, chronologically arranged, of every work which has treated upon puerperal diseases from the time of Hippocrates down to the volume by Dr. Helm, which we have just given an account of. But with all this show of learning and experience, the merits of which we are fully willing to appreciate, he appears unable to form any general or enlarged idea of the subject, or to divest his mind of those trammels of reasoning, into which he has been led by the too common error of mistaking the anatomy of a disease for its pathology. On this point he and Dr. Helm are of accord.

Dr. Kiwisch considers that puerperal fever invariably arises from epidemic influence, and that its sporadic occurrence is very improbable; an opinion to which we can by no means subscribe, for ample evidence and experience have long since convinced us that it frequently does exist sporadically, and this even in its worst forms: we might also add that it is occasionally seen to exist *endemically*, among the patients of certain practitioners who are too eager to investigate the anatomical characters of the disease, which thus becomes propagated not by epidemic causes, but by the more direct and simple process of contagion. He exclaims against the French authors who, like Dr. Helm, would reject the term "puerperal fever" altogether, and call it inflammation of the different organs which may happen to have been attacked; and yet with singular inconsistency, when he speaks of the different forms of puerperal fever, he actually brings them under the three following heads: 1, Peritonitis; 2, Inflammation of vessels, phlebitis, and lymphangioitis; 3, Inflammation of the mucous membrane of the uterus, metrhymenitis, endometritis.

We are far from wishing to deny the all-pervading influence of epidemical causes, and quote the following passage not only for the sake of concurring thus far with the author, but also to show some of the many variations in type which are exhibited by this disease:

"Puerperal fever cases have constantly been observed in groups, not merely in the large lying-in hospitals, but also elsewhere; and the great epidemics during the last few years at our hospital, namely, in 1832-4-5 and 1839, agree more or less with similar epidemics over the whole European continent. The effects of the miasmatic influence is frequently so great as to overcome the greatest variety of individual peculiarity, and stamp the same type upon every case, pro-

ducing a remarkable similarity in the progress of the various cases of puerperal fever at the time. Thus in proof of what has now been stated, I saw in the course of 8 days in two patients at the Lying-in Institution, and in a third at the general hospital, the metastatic ophthalmia which is so rare and which had not been observed for some time before, although the epidemic had prevailed. In like manner no cases of miliary eruption appeared during the first half of the epidemic of 1839, whereas in autumn, in the course of a few days, it appeared so generally both in the town as well as in the institution, that almost every puerperal patient was bathed in watery perspiration. In the spring months of 1839, abscesses of the vagina, which had not been seen for a long time or since, attended nearly all the cases of puerperal fever." (p. 22.)

We especially wish to direct the attention of our readers to the last sentence of this quotation, as it refers to a feature in puerperal fever which has not been commonly observed in this country. We willingly agree in the opinion that not only is the disposition of the female system to disease considerably increased by the different changes of the uterus as in menstruation and childbed, but also that it is more susceptible to epidemic influence at those times; and the fact which Professor Sebastian has remarked that women are peculiarly liable to be attacked by marsh fever when menstruating, is interesting in proof of this assertion. That the system is equally susceptible at the time of conception is, we think, very doubtful; indeed, from the numerous facts collected by Burdach, there is every reason to suppose that it is just the reverse, it being found that animals not only exhibit a much greater tenacity of life at these periods of excitement, but are unaffected by agents (poisons, &c.) which under other circumstances would speedily prove destructive to them.

Although the author has recorded his opinion in favour of the *inflammatory* origin of puerperal fever by the arrangement which he has adopted of its different forms, he nevertheless alludes to the opinion that the blood, which is "the origin of all organic action," undergoes a peculiar change in this disease,—he acknowledges that many facts prove that puerperal fever is a disease of the blood, but appears unable to make a single deduction from this view of any value; he becomes bewildered among the different *results* of puerperal fever, namely, peritonitis, exudation of coagulable lymph, phlebitis, &c. which he mistakes for the disease itself. This error is most conspicuous in his enumerations of the various species, each of which is characterized as being some peculiar form of inflammation. We have long since shown, and our opinion has been confirmed by Dr. Ferguson in his recent work on this subject, that puerperal fever is *not* identical with or dependent upon inflammation, but that it depends upon a vitiated condition of the circulating current. The author now and then gets upon the right track, but soon wanders from it, blinded by theory and erroneous deductions from morbid anatomy. He attempts to disprove Cruveilhier's opinion that the increase of puerperal fever cases, both in number and intensity, is in exact proportion to the number of lying-in patients, a view of considerable value, and which proves the identity of origin between this disease and hospital typhus, &c. Mere numerical comparisons between the number of patients and fever cases give us no accurate conclusions, as the occurrence now and then of puerperal epidemics will be quite sufficient to destroy all means of estimating the real proportion; we therefore do not quote the following numbers in proof of M. Kiwisch's views, but as furnishing some interesting statistical data of the Lying-in Hospital at Prague.

In 1831,	7 patients died out of	1161
1832,	14 . .	1285
1833,	36 . .	1297
1834,	87 . .	1343
1835,	63 . .	1293
1836,	5 . .	1449
1837,	7 . .	1455
1838,	11 . .	1694
1839,	(to the end of Nov.) 37	1597

The author considers that from 3 to 7 died yearly from other diseases than puerperal fever.

He takes a very sensible view of the causes which render patients in lying-in hospitals peculiarly liable to this disease, and justly observes that the number of patients attacked and of fatal cases must ever be greater in hospitals than in private practice, since in the former they are chiefly of the lowest classes, who have been exposed to all sorts of deprivations, depressing passions, &c. and in whom the health is more or less broken down. We cannot certainly accuse him of over-consistent opinions, when, after opposing Cruveilhier's views above mentioned, he terminates the paragraph by the following correct observation: "It must not be overlooked that a number of persons lying together, freely exposed to effluvia in epidemic diseases, easily render the character of these diseases more dangerous." (p. 40.) We were rather surprised to find that he denies the *contagious* nature of puerperal fever, and declares that although the patients who were affected were not always separated from the healthy ones at his hospital, he never observed a case where one patient caught the disease from her neighbour. We would, however, much rather form our opinions of its contagious or non-contagious nature on the answer given by the author as to what was the fate of each patient who was delivered by him after making a post-mortem examination of the fatal fever cases in the hospital? A similar erroneous opinion seems to prevail at the Vienna hospital, as far as we can judge from an observation of Dr. Helm.

It is to the British practitioner that we are indebted for strongly insisting upon this important and dangerous character of puerperal fever. None has illustrated it more strikingly than the late Dr. Gooch, (on the Diseases of Females, p. 4,) and it is to those who deem it necessary to examine minutely after death every case of fatal puerperal fever, that we would most earnestly impress on their minds the following observation of Dr. Rigby: "Where a practitioner has been engaged in the post-mortem examination of a case of puerperal fever, we do not hesitate to declare it highly unsafe for him to attend a case of labour for some days afterwards. The peculiar-smelling effluvia which arises from the body of a patient during life is quite, in our opinion, sufficient to infect the clothes; and every one who has made a minute dissection of the abdominal viscera, especially in fatal cases of puerperal fever, knows full well that it is almost impossible to remove the smell from the hands for many hours, even with the aid of repeated washing; it must be therefore self-evident that, under such circumstances, it would be almost criminal to expose a lying-in patient to such a risk." (Library of Med., vol. vi. p. 292).

We have before stated that Dr. Kiwisch appears to be a man of ob-

servation, although he makes but little use of his observations in the way of deduction.

"Operations," he says, "which in the absence of an epidemic are not attended with even the slightest unfavorable results, during its presence are frequently fatal; indeed we may almost certainly calculate upon an attack of puerperal fever where we have had a difficult case of turning, or separation of the placenta during a severe epidemic. In the same way we see the formation of gangrenous abscesses after easy forceps cases during an epidemic, which would not have occurred at a more favorable time. If such results were to deter us from operating, we should only expose the patient to still greater danger; since, where the uterus has been overstrained during labour, it is more susceptible of disease, and hence it is advisable rather to operate early." (p. 43.)

But why should it be the fact that it is dangerous during a puerperal epidemic to repeat the vaginal examination at all frequently, and that the introduction of the hand, whether for turning or removing the placenta, &c. is almost certain of being followed by a severe attack of the malady? Simply because it is what the author doubts it to be, *contagious*. Within a week from the time of our writing these words, a fatal proof of this fact has occurred to us. A young practitioner, contrary to advice, examined the body of a patient who had died from puerperal fever; there was no epidemic at the time, the case appeared to be purely sporadic: he delivered three other women shortly afterwards; they all died with puerperal fever, the symptoms of which broke out very soon after labour; the patients of his colleague did well, except one, where he assisted to remove some coagula from the uterus; she was attacked in the same manner as those whom he had attended and died also: we trust that this fact alone will for ever silence such doubts, and stamp the well-merited epithet of "*criminal*," as above quoted upon such attempts.

Although the well-known fact of dangerous attacks of puerperal fever being seen, especially after cases of hemorrhage, stares him in the face as an argument against the inflammatory origin of the disease, the author endeavours to explain it away by some far-fetched reasons, quite forgetful or ignorant of the fact that vitiation of the blood has arisen from the presence of putrid coagula and lochia retained in the passages.

Although we quite agree with the author that those cases of puerperal fever which appear soonest after labour are usually the worst, we beg to differ from him most widely when he considers that "every lying-in woman who has continued quite well during the first ten or fourteen days after her confinement is perfectly safe against an attack of puerperal fever," (p. 49;) as we have repeatedly seen severe cases of the disease commencing from the tenth to the fourteenth day after delivery, although we willingly own that the majority commence at a much earlier period. Neither can we agree that "the usual seat of the critical discharges is the skin," (p. 51,) for it is by no means uncommon to see profuse perspirations during the early attacks of puerperal fever, especially of the adynamic sort, without any diminution of the quickness of the pulse or relief to the patient, in some of the milder and more inflammatory forms; a general diaphoresis is favorable, but we consider the bowels, the uterus, the liver, and the kidneys, much more capable of affording what may be called critical discharges in this disease.

In his chapter on the treatment of puerperal fever, Dr. Kiwisch considers it under the eight following heads:—1, general bleeding; 2, topical

bleeding; 3, purgatives; 4, emetics; 5, mercurials; 6, oil of turpentine; 7, ice; 8, vaginal injections. We gain however but little from his observations; for, although he appears to have read extensively upon the subject, he does not seem aware that different authors have described a considerable variety of affections under the same head of puerperal fever, and hence leaves the inexperienced part of his readers in utter confusion and uncertainty as to what line of treatment ought to be adopted. He attempts to compare the practice of those who did not bleed with that of those who bled freely, and considers that the results of the former were invariably much more unfavorable. He endeavours to explain this variance of practice partly from the fact "that there really are forms of puerperal fever which either require slight bleedings or none at all," (p. 61;) but he does not tell us that there are forms of puerperal fever which do not *admit* of bleeding, which are of a low, adynamic, malignant character which puts it out of the question; and that this alone is the reason (and a sufficient one too) why those epidemics in which bleeding has been found inadmissible have proved so fatal. He does not tell us that the very fact of this remedy being indicated is the best possible proof that the disease is not appearing under its most deadly form, but from his reading and experience he considers "that general bloodletting will always remain an essential in the treatment of puerperal fever." From this and other observations, and also from his arrangement of its different forms as so many species of inflammation, we are led to the conclusion that the cases which he has witnessed were chiefly of this character. He is cautious in the use of purgatives, but considers "that mercury, when given so as to induce symptoms of salivation, is one of the best remedies in most puerperal fevers, and that it can be given with much advantage in the metastatic forms of inflammation, and even in the adynamic stage." (p. 66.) The correctness of the last observation may be very fairly doubted, and if ever the calomel is to be of use in this stage, it is rather in a single dose of eight or ten grains, than given in smaller and repeated doses combined with opium. "Small doses," as Dr. Ferguson justly observes on the treatment of the gastro-enteric form of puerperal fever, "create purging, pain, and irritation, while the full dose produces one to six large pultaceous stools; after which the tongue is cleaned, rendered less red, and more moist, and the pulse usually falls. These stools, when examined, appear to contain the fecal matter suspended in large quantities of mucus and greenish bile, as if the turgid capillaries of the irritated intestinal canal and liver had been freed from their load."*

Dr. Kiwisch gives a short account of the different trials which have been made with oil of turpentine, and gives a quotation from Dr. Michaelis's Observations on the Use of Ice, of which we gave an abstract some time ago.† On the use of opiates, except when given with calomel to promote salivation, Dr. Kiwisch is silent, as also upon the subject of saline medicines; indeed most of his observations on the treatment are far inferior to the excellent ones in Mr. Moore's able work, and still more so in every respect to the clear and practical views of Dr. Ferguson. The sound reasoning and deductions of the authors just named contrast

* Essays on the most Important Diseases of Women, by R. Ferguson, M.D. p. 159.
† Brit. and For. Med. Review. Oct. 1837.

strikingly with the vague no-opinions of the present work, which we shall therefore pass over.

The author's description of the manner in which effusion of lymph takes place in peritonitis is worthy of attention; indeed, he appears to have accurately investigated the "anatomical characters" of the disease; and, like many others, evidently supposes that in so doing he has been describing its pathology:

"At the commencement of the disease the exudation is clear, lymphatic, reddish, and covers the peritoneum with a uniform slimy layer; when it has been secreted a few hours, and has accumulated in larger quantities, it collects in the lower parts, becomes thick, flocculent, and separates into two layers, a serous and a flocculent one; the latter deposits itself upon the abdominal organs, namely, the liver, the spleen, the uterus, the intestines, and ovaries; it is partly absorbed, and forms upon these organs membranous coverings, which at first are soft and can easily be wiped off, and afterwards become tough and cellular, forming firm adhesions between the folds of peritoneum, or become liquid and purulent, whilst the serous portion is more or less absorbed. In those parts where the flocculent portion is collected in considerable quantities, it becomes more homogeneous, and assumes a purulent appearance." (p. 74.)

Dr. Kiwisch has given an elaborate chemical analysis of the exudations in puerperal fever, which our limits forbid us to insert, but we must be allowed to quote his observations on the acid or alkaline condition of these fluids:

"The chemical characters of the exudations vary in different individuals, as indeed is usually the case with morbid secretions; this is not only confirmed by the different results of the analyses which have been made, but also from the fact that even a cursory examination of the fluid discovers different properties. Even the test of vegetable colours gives different results; thus Jacquin Chaussier found it alkaline, Busch neutral, Kastner acid, and according to my own observations it was sometimes one sometimes the other; nevertheless, I have reason to think, that when it is quite fresh it is always slightly acid, for on puncturing the abdomen of a patient suffering under the disease, the effused fluid which escaped was remarkably acid." (p. 89.)

It is interesting to observe how far the characters of puerperal fever differ at Prague from those which are ordinarily observed in London, situated as these two cities are, so far apart, one in the eastern, the other in the western part of Europe. In the work before us we find here and there appearances described which are not commonly, or perhaps scarcely ever, met with in this country; it will therefore be necessary for us to mention them, that they may be recognized should they ever occur here in any future epidemics. Thus, for instance, in general peritonitic exudation and enormous tympanitis, the intestinal canal appears to become so paralysed as to be followed by results not often witnessed in this country. There is "frequently an enormous accumulation of fluid matters in the intestinal canal which continues obstinately constipated till the last moment; in this case it usually comes to vomiting of every possible contents of the bowels, even to the very masses of fæces." (p. 94.)

Another effect of extensive effusion of lymph, &c. into the abdominal cavity is the formation of large sacs or cells, by the intestines, &c. adhering together, filled with purulent matter.

"These sacculated accumulations of pus compress the adjacent organs, and frequently produce considerable cavities, as, for instance, in the uterus, liver, &c. where in a cursory examination they might easily be mistaken for cavities

of these organs. (p. 75.) . . . . If the exudation has become sacculated, if it has not attained to any considerable extent, and the constitution of the patient still possesses strength, recovery follows pretty quickly; on the other hand, if the collection of purulent matter be very large, it usually becomes very troublesome from the pressure which it exerts on the adjacent organs, from the sensation of tension and fluctuation, and recurring attacks of violent pain. Not unfrequently lasting functional derangements of the intestines are produced by the great pressure and numerous adhesions of the abdominal viscera, and sterility will result from the adhesion and dislocation of the tubes and ovaries." (p. 99.)

Modifications of this latter condition are occasionally seen during a lingering convalescence from severe puerperal peritonitis in this country, and not unfrequently after a protracted struggle prove ultimately fatal. In some the recovery from the disease seems nearly complete; a little more tone and strength seem all that is wanting to restore the patient to perfect health; but this happy end is not attained; the chylopoietic functions struggle on imperfectly, and only with the constant aid of medicine: at length marasmus sets in and the patient sinks. In others the recovery has been more complete, although the patient has continued frequently subject to deranged bowels, &c. with abdominal pain, the result probably of adhesions from the lymph which was effused during the attack.

Under the "anatomical characters" of what the author calls "*Lymphangioitis*," we find morbid appearances described which are certainly but little met with in this country. Having mentioned the ordinary changes which are observed in inflammation of the uterine lymphatics, the author alludes to the unusual degree of dilatation which they occasionally undergo. In places they are as large as a nut, and being filled with purulent matter, are usually taken for abscesses in the substance of the uterus.

"Most commonly we find the lymphatics inflamed on the sides of the cervix and body of the uterus, forming hard conglomerate masses, frequently as big as a hen's egg; on cutting into them at the beginning of the inflammation, they are found to contain a firm white mass of exudation, which is either contained in the lymphatics, which are not much dilated or thickened, or which is partially infiltrated into the surrounding cellular tissue: it afterwards solidifies and grows yellower, the lymphatics continue to dilate more until they attain the size above mentioned, and look like so many isolated abscesses." (p. 107.)

We cannot admit that puerperal uterine phlebitis (metrophlebitis) is necessarilly produced by epidemic influence, as experience has long since amply convinced us that this affection frequently, we might even say usually, arises from direct contact of morbid animal matter with the inner surface of the uterine veins. Under such circumstances, the inflammation of the veins cannot be looked upon as the cause of the vitiated state of the blood, but as a prior, or perhaps contemporaneous, effect of the absorption, imbibition, or, at any rate, introduction of morbid or putrid animal matter into them, producing by its contact a state of phlebitis. In many cases their uterine portion becomes quickly impervious from swelling, &c. thus confining the mischief to the local affection; in others, the rapid advance of adynamic typhoid symptoms show that the circulating current has also become affected.

"Piorry considers that the formation of pus in the veins may take place in three ways: by absorption; by the mechanical entrance of pus, which has been poured upon raw surfaces which are in immediate connexion with open venous

mouths; and thirdly, by the exudation of pus upon the inner surface of the inflamed vessel." (p. 114.)

The author expresses it as his own conviction that when pus is found in the vessels it is not the result of absorption; and in the majority of cases we would agree with him, inasmuch as the cavity of the uterus rarely contains any quantity of pus after labour, but a mixture of pus, lochia, half-dissolved coagula, and other fibrinous matter, &c. forming a "*putrilage*," which most assuredly can never remain long in contact with the mouths of the uterine veins without producing dangerous consequences. It is useless for the author to deny that these effects can be thus produced, upon the assumption that the uterus is well contracted, and therefore effectually closes these openings; but supposing the uterus is *not* well contracted, as is frequently the case, is there still to be no danger of the *putrilage* passing into the venous openings of the uterine cavity? Does the uterus in any case remain in one continued state of firm contraction from the moment that labour is over? Does it not slowly and gradually increase in size and diminish in hardness until the second or third day, and then subsides, until it at length resumes the ordinary characters of the unimpregnated state? and does not the quantity of the lochia bear a close relation to the size of the uterus during the first few days after labour? If such were the permanent state of firm uterine contraction after labour, the secretion of lochia would be as rare an occurrence as the absorption of putrilage.

The author's description of the metastatic inflammations which occur in puerperal fever is very good; we cannot agree with him in assigning these local attacks to the state of phlebitis, but to the more general cause, namely, the vitiated state of the circulating current.

"The deposits of purulent matter in the cellular tissue are capable of attaining an enormous extent, and frequently occupy half an extremity. The cellular tissue is frequently extensively destroyed, the adjacent structures more or less implicated in the inflammatory process softened or having undergone a fatty degeneration. The purulent infiltrations are most frequently found in the broad ligaments, in the inguinal, sacral, or other pelvic regions; the deeper they are situated, the greater will be the difficulty in finding their way through the neighbouring parts; at the anterior wall of the abdomen they burst through at the umbilical or inguinal region; in the sacral region I have twice seen them make their way through by the side of the spinous processes of the sacrum, or a considerable quantity of purulent matter had been discharged by the labia. Not unfrequently these abscesses form in the inner surface of the thigh, and are seated either superficially beneath the fascia, or deep among the muscles, and are frequently confounded with phlegmatia dolens. Where the general symptoms assume a typhoid character, the abscesses are filled with putrid matter, and the surrounding soft parts are liable to pass into gangrenous destruction." (p. 131.)

The following observations, it is true, belong more strictly to phlebitis, and present appearances not often met with in this country:

"In most cases where the metastatic pneumonia was violent, I found the pulmonary arteries of the diseased lobe usually inflamed as far as their point of exit from the pulmonary tissue, and filled with adherent lymph and pus." (p. 134.)

The author supposes that the above-mentioned appearances in the pulmonary arteries were produced by extension of phlebitis along the whole tract of venous canal from the uterus to the lungs, an explanation which is quite untenable, and implies an extent of venous inflammation, not to

mention a similar state of the inner surface of the right ventricle of the heart, which is scarcely ever met with when the whole structure of the lung has been inflamed, and with it the venous trunks. Pneumonia is not a common attendant upon or modification of puerperal fever, at least as it has usually appeared in London; we have, however, seen two cases recently where it manifested itself, and in the epidemic puerperal fever witnessed by Dr. Kiwisch at Prague it seems to have been of frequent occurrence.

We agree with the author in placing the spleen first in the list of organs which are most frequently found diseased; the liver and the kidneys follow. He describes the organic changes, commencing in the form of lobular inflammation, in spots from the size of a pin's head to that of a walnut, sometimes connected, sometimes very numerous (more than a hundred), superficial or deep.

"The organ attacked is usually found in a state of great congestion; the exudations of lymph have great disposition to dissolve into putrilage, and the parenchyma itself to soften; the structure of the spleen before it comes to the formation of pus frequently breaks down into a red pulp, forming a fluctuating mass within its capsule." (p. 135.)

The effects of puerperal metastatic inflammation in the brain are interesting, the more so as they are not commonly observed:

"The metastatic inflammation of the brain was observed to be of considerable extent, namely, from the size of a pea to that of a walnut . . . . The inflammation here produces at first congestion, with softening of the brain and lymphatic infiltration; the formation of matter comes on afterwards. The purulent deposit is usually surrounded with softened cerebral substance. In one case where the brain was attacked it appeared under the form of pure cerebrophlebitis, for the finest vessels of the inflamed spot (which was as large as a walnut) contained firm plugs of coagulable lymph, which could be traced in a continuous course into the larger vessels, and even extended to the longitudinal sinus: this, as also the lateral sinus to its opening into the jugular vein, was thickened and distended with firm lymph, which in the middle presented a purulent and dissolved appearance." (p. 136.)

The author's description of the inflammation which occasionally attacks the eye in puerperal fever is very minute, but it does not present exactly the same characters which have usually been met with in England; the ring round the edge of the cornea which makes it so closely resemble the characters of common rheumatic or arthritic inflammation, does not appear to have been present in the cases observed at Prague:

"The metastatic ophthalmia exhibits various changes in the structure of the eye according to the degree of its progress: at first there is only swelling with injected vessels, a state which can increase even to extravasation of blood in the sclerotic and conjunctiva, with severe congestion of the vessels in the other parts of the eye, especially of the choroid and of the iris, which becomes discoloured. Lymphatic exudations soon form partly on the surface of the inner linings of the eye, partly between their layers, by which they are thickened, and the choroid, as also the uvea and corpus ciliare, become partially or entirely discoloured: the tunica vitrea, the capsule of the lens, and the structures of the anterior chamber become similarly affected; flocculent exudations of lymph take place in the canal of Petit, in the fluid of the vitreous humour, in the lens, in the chambers of the aqueous humour, and in the cornea. As the disease proceeds, the various structures of the eye become partially softened, disorganized, and the effused matter becomes purulent or decomposed (*jauchig*), perforates the lamina of the cornea, or by destroying the connexion of the sclerotic with the cornea finds a vent externally." (p. 137.)

The characteristics of these metastatic inflammations, as the author calls them, in the muscles are much the same as those observed in this country, but we must reject the notion of their being "in consequence of phlebitis:" our reasons for so doing have been already given. He has described cases where destruction of inter-osseous cartilages has taken place to an extent which we have never witnessed, nor do we recollect to have seen any similar instances recorded by English observers:

"The destruction of cartilage in the synchondroses of the pelvis is a process which differs little from that which takes place in the muscles, except it may be remarked that the accumulation of pus often attains an incredible extent, so that a collection of purulent matter frequently forms between the symphysis ossium pubis as large as a man's fist. Upon examination the cartilages are usually found to be entirely destroyed, and the adjacent bones carious." (p. 138.)

The changes in the skin and mucous membranes, which Dr. Kiwisch has observed, are also very remarkable, and equally uncommon in English practice:

"The metastatic deposits in the skin sometimes appear under the form of boils, sometimes of pustules, which are not unlike those of smallpox, or form large purulent bullæ, which are only covered by epidermis. Between the coats of the intestines under the mucous membrane, collections of purulent matter are found in immense numbers, from the size of a pea to that of a dollar, by which the mucous membrane is raised into fluctuating elevations and irregularities; in like manner small abscesses are found under that of the pharynx and œsophagus." (p. 139.)

The author's diagnosis of phlebitis is very unsatisfactory, and tends to confirm the observation which we have already made, that he has confounded the cause with its effects; he appears unable to realize the fact that the local inflammations which attend puerperal fever are the results of this disease, *not* the disease itself; and from this too common error he is led into still greater ones respecting the symptoms. Our limits will not allow us to combat his assertion that, although the symptoms of phlebitis in superficial structures are sufficiently distinct, we possess no appreciable diagnostic marks of this disease in the uterus, as it would require our entering upon a detailed enumeration of its symptoms.

In describing the results of phlebitis, Dr. Kiwisch offers some excellent remarks on the erroneous views of some author, in endeavouring to confound or identify phlebitis with phlegmatia dolens:

"Œdematous swelling, either of the corresponding extremity or of the lower half of the trunk, may follow obliteration of the femoral or pelvic veins, or of the cava ascendens. This œdema extends from the periphery towards the obliterated trunk, is without pain or change of colour or temperature, easily yields to the pressure of the finger, and is frequently mistaken; it is the more easily confounded with phlegmatia alba dolens, because the course of the inflamed vein is usually very tender; hence we find that, even with distinguished observers, phlebitis is mentioned as the proximate cause of phlegmatia dolens; and Dr. R. Lee considers this latter disease as synonymous with crural phlebitis." (p. 145.)

His observations on the mania and other cerebral affections which sometimes accompany puerperal fever are very excellent, and we quite agree with him in attributing these local attacks to the generally diseased condition of the circulating current; but, as we have already stated, we cannot attribute this latter state to the effects of phlebitis in every case,

or even in the majority of such cases. His account of those cases where the disease attacks the heart is equally good, and as they are not of common occurrence we may be permitted to quote him on this subject:

"The metastatic carditis, with deposition of purulent matter in the muscular substance of the heart, is scarcely capable of being ascertained during the patient's life; the metastatic inflammation of the valves (endocarditis), on the other hand, is more distinguished by its symptoms. I saw this latter form of disease repeatedly during the last epidemic; twice in patients who had previously suffered from endocarditis, and who probably were therefore peculiarly liable to be attacked. The disease in these cases manifested itself by violent vascular excitement, strong palpitation, during which upon examination the heart was felt beating powerfully over a surface of many square inches. At the same time the sounds of the heart were more or less dull upon auscultation, running into each other, and indistinct, from more or less sound of *frottement*. No other symptoms elsewhere were perceptible. The course of the disease was very violent, and the patients all sank very rapidly." (p. 158.)

Dr. Kiwisch notices the variety of opinion which exists respecting the nature of phlegmatia dolens, viz. that one party considers it to be phlebitis, others lymphangioitis, or inflammation of the lymphatics; and very justly, as we conceive, declares himself in favour of the latter opinion. In alluding to the other he observes:

"The opinion of these authors was necessarily soon overthrown by the results of pathological anatomy, for many authors of modern times, as well as myself, have found the veins perfectly healthy in cases of the most strongly-marked phlegmatia, and it remains to prove the other opinion which considers inflammation of the lymphatic vessels to be the cause. ...We always find in the acute œdema of puerperal women swelling and pain of the lymphatic glands and vessels, also in the vicinity of the affected part; and even in the post-mortem examinations which have been reported by those who consider that it is phlebitis, we usually find considerable changes of the lymphatic system mentioned. ....When we bear in mind that the metastatic inflammations in phlebitis run an entirely different course, inasmuch as they are usually combined with violent inflammatory redness of the skin and rapid formation of pus, whereas phlegmatia is usually characterized by the white colour of the skin, the formation of serum, and tedious course; it is still more improbable that phlebitis has any share in this disease, and if it be combined with phlegmatia it must be looked upon as an accidental complication, in the same manner as inflammation of the cellular tissue and muscles, which last Hull considers to be the chief seat of the disease in question. If we also consider the course of lymphangioitis in those who are not puerperal patients, we find that wherever the disease is at all intense, acute œdema (phlegmatia) is sure to accompany it. Piorry (Traité de Diagnostic et de Semeiologie, § 6,) says, 'Inflammation des vaisseaux lymphatiques est le plus souvent accompagnée d'un œdème considérable des parties situées au dessous des points ou les rameaux malades se rencontret. Toutefois un engorgement spécial en est quelquefois l'effet. Le membre se tuméfie uniformément, devient tendu et luisant; des abscès s'y développent dans certains cas, et des indurations chroniques y on lieu dans d'autres circonstances.' The description which Piorry has given of lymphangioitis in general corresponds at the same time with that of phlegmatia, and hence it becomes evident that this disease is not confined to puerperal women: that it neither requires derangements of the milk or of the lochia to be induced, and that it can also occur in the male sex," &c. (p. 166.)

Our limits forbid our quoting further from the author upon this subject, although his observations are exceedingly interesting and valuable. He cites several modern authorities, more especially that of Dr. v. Ammon, in confirmation of his view that phlegmatia dolens is the result of lym-

phatic inflammation; we ourselves have for some time adopted this opinion, experience having fully proved to us that the notion of its identity with crural phlebitis was quite untenable.

The author's description of the erysipelatous inflammations in puerperal women is interesting, and shows both extensive observation as well as reading. Among the various appearances which the skin presents in puerperal fever, he mentions the varioloid, scarlatinoid and urticaria-like eruptions which have been occasionally observed; and we have ourselves noticed an epidemic of peculiar malignity, which occurred some years ago in this metropolis, where, but for its livid colour, the eruption bore a very close resemblance to rubeola. We quote the following passage not merely for the purpose of pointing out a peculiar appearance which is sometimes seen in these cases, but also to show how, in spite of the author's notions respecting the inflammatory origin of puerperal fever, the real nature of this disease forces itself upon him:

"I have still another appearance to mention, which seems to have less connexion with phlebitis than with the morbid state of the blood (blutdyscrasie) which arises at the same time; I allude to those circumscribed, usually bluish-red swellings, of about the size of a sixpence,* on the back of the hand and instep, or also on other parts of puerperal patients, which are usually intensely painful, and are the forerunners of approaching death. Where the patient is much reduced, there is no discoloration of the skin, and the painful swelling remains pale: the more malignant and acute the form, the greater the extent and intensity of the colour of these spots; thus in one case I saw more than half the lower extremities thus covered, this was also attended with an eruption like ecthyema, which ran through its stages very quickly." (p. 173.)

The author's observations on the treatment of phlebitis are practical and good. He appears to have used ice in different forms of puerperal inflammation pretty extensively; and as we have on former occasions called the attention of our readers to the use of this remedy, as recommended by Professor Michaelis, of Kiel, we are the more desirous to furnish whatever knowledge further experience may have gained upon the subject. Dr. Kiwisch's observations, however, refer only to the external application of ice in local puerperal inflammations, and not to the internal exhibition of it in the adynamic form of puerperal fever:

"It is especially in cases of external phlebitis, in encephalitis, the various external metastases, inflammation of the joints and phlegmatia dolens, which may be advantageously combated by the external application of ice. The development of heat over an inflamed vein is often very violent, so that the applications of ice must be frequently renewed, and applied over a considerable extent of surface in order to produce any effect. The same holds good, more or less, with encephalitis, where it is best to cover the shaven scalp with ice in bladders. In crural phlebitis and in phlegmatia, the whole extremity must be enveloped in ice fomentations, and the same holds good with joints which are attacked with the arthritic inflammation. We ought not to be deterred from the external application of ice from the fear of checking either the lochia or the cutaneous perspiration, because both of these are already more or less deranged by the morbid process which is going on, and this state can only be removed by the annihilation of the disease itself. We have moreover seen the best results from the use of ice, without any of the dreaded symptoms from the suppression of the above-mentioned excretions." (p. 179.)

* The author's words are "the size of a kreutzer," which is a very vague expression; and it might either be a silver kreutzer, which is not larger than a threepenny piece, or a copper one, of about the size of a shilling.

In the chapter on inflammation of the mucous membrane of the uterus, the author gives us the choice of two names for this affection, viz. "Metrhymenitis" and "Endometritis." We object to both, and any others which might be invented, for it is obviously wrong to look upon inflammation of the mucous membrane of the uterus in the puerperal state as a distinct disease; it is merely one of the many results of puerperal fever, and cannot be described separately. As far as regards the mere anatomical appearances which are seen in post-mortem examinations of the disease, there is no objection to their being classed under different heads, according to the different tissues which have been attacked; but in discussing the subject practically we cannot separately describe or consider local affections, which are subordinate and dependent upon the general one. Dr. Kiwisch's description of the changes which are seen in the mucous membrane of the uterus after fatal puerperal fever is excellent, and as such we quote it, but, let it be understood, *not* as belonging to a distinct disease:

"The inflammatory process of exudation does not always extend itself over the whole internal surface of the uterus, but is confined to circumscribed spots, usually the site of the placenta and the cervix, two portions which undergo the most severe traumatic irritation. The exudation of lymph is usually attached very firmly to the site of the placenta, and is frequently mixed with sanies, so as to closely resemble portions of placenta, for which it has been mistaken. At the cervix, which from venous engorgement is generally of a dark blue, the lymph is attached with greatest firmness to the superficial lacerations, and from the free access of air becomes of a dark green." (p. 187.)

The author has endeavoured to show that in endometritis we shall have a consecutive inflammation of other mucous membranes of a similar character, the symptoms of which will serve as a diagnostic to the uterine affection: the idea is ingenious, but can hardly be recognized as a law; for, if so, we ought to find extensive endometritis in all cases of what Dr. Ferguson has so ably described in his second form of puerperal fever, viz. fever with gastro-enteric irritation; and vice versâ, in every autopsy where well-marked endometritis has been discovered, we ought to find corresponding traces of analogous inflammation in the intestinal canal, &c.: this is certainly not borne out by English experience; in fact we seldom, perhaps never, find exudatory inflammation of the lining membrane of the uterus as a solitary affection in fatal cases of puerperal fever, but associated and combined with phlebitis, and especially with considerable changes (softening, &c.) in the muscular tissue of the uterus. In this country it has only been met with as a result of the malignant adynamic form of puerperal fever, where not a symptom of intestinal irritation has occurred during life, still less have any inflammatory traces been found after death. Still, however, we are far from wishing to state these opinions, founded upon experience in this country, in contradiction to those of the author, supported by the ample opportunities for observation which he has enjoyed at Prague; because, as we have before said, there is no doubt that puerperal fever exhibits many peculiarities and modifications in one place which are not met with at another. The anatomical characters of endometritis are not always very distinct, and have been mistaken by many for a ragged, half-dissolved state of the decidua, portions of which had been left adhering to the uterus. It is this form of the

disease which, from the author's description, exhibits many features not commonly met with in this country, particularly where it extends to the mucous membrane of the vagina:

"The disease extends either directly from the uterus to the mucous membrane of the vagina, and we find its upper extremity covered by the same exudation which covered the os uteri; or which is more frequently the case, this portion of the vagina remains free, and the inflammation fixes it seat especially at the os externum, where we find a thin stratum of yellow exudation, which is easily wiped off. In more severe cases, especially in the dysenteric form, the inflammation attacks the whole mucous membrane; the layer of exudation is mostly very firmly adherent in these cases, and infiltrated into the membrane. The upper layer of lymph is dark green, and mixed with fatty flocculi, which give the vagina a gangrenous appearance. At a later stage the exudation is thrown off, either with the whole mucous membrane, or only with its epithelium, and the raw surface is covered with delicate granulations. A more frequent result than this is acute ulceration of the mucous membrane of the vagina, especially of the posterior commissure. Abscesses form here, of variable depth, and with sharply defined edges, destroying the posterior commissure, and spreading in all directions from the lower angle of the vulva, and varying in their mode of progress according to the character of the constitutional symptoms: thus, in some cases they assume a simple inflammatory appearance, occasionally of a triangular form, from one to two inches in extent upon the posterior wall of the vagina; in others they are of a sphacelous or phagedenic character, in which case they not unusually entirely destroy the whole perineum, the external genitals, and a large portion of the vagina and urethra; they are surrounded with everted erysipelatous edges, and are covered with masses of gangrenous slough." (p. 194.)

In terminating our observations on Dr. Kiwisch's work, we sincerely regret that his attention has been so exclusively directed towards the anatomical characters of the varied and numerous effects which puerperal fever produces in different parts of the body, for he has thus prevented himself from taking a more enlarged and strictly pathological view of this formidable malady. If instead of following the superficial reasoning of those authors, who because they have found marks of inflammatory action in certain tissues accompanying puerperal fever, have therefore pronounced *the disease* to be inflammation of these structures, he had pursued the track of those pathologists who have so successfully referred this disease to its proper place among the affections produced by a vitiated condition of the blood, he would have taken a more extended view of the subject, and attained much more correct and philosophical deductions respecting its habitudes and varieties: he would not only have given a better enumeration of its symptoms, but probably have been led to adopt more efficient means of treatment. Instead of confining himself to bleeding, purgatives, tartar emetic, small salivating doses of mercury, and oleaginous medicines, remedies which in the adynamic form of puerperal fever are not only inefficient, but sometimes even inadmissible, he would have tried the effects of occasional large doses of calomel as recommended by Dr. Ferguson, and also of saline medicines, which according to our experience are two of the most valuable means which we have to rely upon.

The value of the cases at the end of the work is much deteriorated by the author's preconceived opinions; for under the head of Metrhymenitis

he brings a number of different affections, simply because there has been more or less derangement of the intestinal mucous membrane.

The idea that putrid matter in the uterus can be absorbed into the system does not once seem to strike him; and even where he does refer to a vitiated state of blood (blut-dyscrasie) his notions are vague and imperfect. Nos. 5 and 14 of his cases are, in our opinion, evidently produced by the presence of putrid matter in the uterus and vagina, and we cannot help attributing the two relapses which occurred in No. 5 to his not having removed the offending cause by warm-water injections. There are, however, several features in these cases which show a somewhat different type to the puerperal fever usually seen in the English metropolis: the attacks are usually very early after labour, the pulse is neither so quick nor so feeble, being seldom above 100, and in many instances bearing bleeding and active purging well.

In passing our opinion upon this work, we have spared neither praise nor blame, dispensing the one as freely as the other, according to our views of the subject. Although containing so much valuable matter, based on ample experience, we cannot consider that the author has even kept pace with the knowledge of this disease, as it at present stands in this country; we therefore regret that in giving so ample a list of the works upon puerperal fever, he does not appear to have seen the valuable monograph by Dr. Ferguson to which we have so often alluded.

Art. VI.

Practical Observations on Injuries of the Head. By William Sharp, f.r.s., Senior Surgeon to the Bradford Infirmary, &c.—*London*, 1841. 8vo, pp. 168.

To the practical surgeon, injuries of the head have at all times proved a favorite study, and the ordinary accidents of life have hitherto afforded him no limited sphere wherein to exercise his skill in regard to them. In many spots of the sister isle this class of injury long ranked (to borrow a word from our author) as *endemic*, occasionally assuming also an epidemic character, and the scars of a broken pate were almost as common as those of the smallpox; but it is gratifying to be able to state that, of late, one man, and he not of our profession, by wisely removing the predisposing cause, has remarkably checked, nay well-nigh uprooted, the most prevalent species of this uncomfortable affliction of the people. In this country, even had similar attempts proved successful, as we are sorry to think has not been the case; still the spirit of enterprise and manufacture, prolific in railways, engines, and machinery of all kinds, would have left no room to fear that the surgeon of the present day had need to rest content with a diminished field of observation. We have no fault to find with this railway age in that respect, for in it and by it injuries of the head and other parts are at least as plentiful as heretofore; though, perhaps, there may be often good reason to complain, as did the worthy Doctor Sitgreaves of the puissant Captain Lawton, that the blow is accompanied with such an ill-calculated degree of brute violence, that seldom a sufficient opportunity is afforded for the display of professional skill and dexterity. But be that as it may, the surgeon is still anxious for further

information on the nature and treatment of injuries of the head; and although he possesses already the valuable writings of his countrymen, Pott, Samuel Sharp, Hunter, Hey, Abernethy, Bell, Cooper, Brodie, Liston, &c., he hears hopefully that to the name of Sharp, though not Samuel, is appended something like another "Critical Enquiry into the present state of Surgery" on this subject.

It is our duty to convey the results of this enquiry to those who may not have been able personally to become acquainted with it. And although we must honestly confess that disappointment has attended our perusal, and though the conviction is painfully distinct that the author must not venture, even in hope, into the same honoured place with his namesake; yet as the work is by a man of extensive experience, who professes to have bestowed much care on its production, we hope to be able to extract from it some sound practical information regarding "what ought to be considered the best rules to guide us in the present state of our knowledge," (p. 15:) we feel it also imperative on us to notice certain sins, both of omission and commission, and briefly yet plainly to rectify the one and supply the other.

The subject is naturally divided into Concussion, Compression, and Wounds of the Brain; their causes, nature, and treatment.

Concussion. We most perfectly agree with the author as to the propriety of strictly *defining* the term, so as to obviate the confusion caused by "neglecting to separate cases of concussion, from all in which extravasation or other visible lesion of the brain has occurred." In proof that such confusion does exist, he quotes from a recent paper in a medical journal,* where certainly the writer makes his interpretation of "concussion of the brain" sufficiently extended, insomuch that one is only surprised that he should have omitted porrigo, encysted tumours of the scalp, and one or two other affections of the head fully as much connected with concussion as many of those which he has included under the term. But more mischievous errors than this are to be found in surgical literature. In some recent "Systems of Surgery," the symptoms and characters of concussion and compression are so jumbled together as to render it utterly impossible for the student, however anxious, to make out from *that* source any distinction between the two affections. We readily admit that such distinction is often more easily found in the closet than at the bedside of the patient, still there *is* a distinction, and a tolerably plain one too; and surely a systematic writer on surgery is much to blame, if he neglect to make that apparent to the pupil. As to definition, the author wishes that the "term concussion or commotion of the brain should be restricted to cases of an affection 'of one or many functions, without perceptible change of structure in the cerebral fibre,' or other morbid appearance within the cranium; or, in the words of Benjamin Bell, 'such a derangement of the brain as obstructs its natural and usual exertions; but which does not leave such marks of its existence behind it, as to render it capable of having its real nature ascertained by dissection;'" and these symptoms may be the result of violence either applied to the head itself, or communicated to it from some other portion of the body, as by falls on the breech, feet, or hands. To this definition we do not

* Medical Gazette, June, 1839.

object, but we certainly doubt the propriety of including within it cases of injury done to the head, in which the *symptoms do not appear for some considerable time after the accident.* We hold that immediate occurrence is essential to the existence of concussion; and that those cases in which the patient at the time feels little or no inconvenience, but after some days begins to complain, and goes on from bad to worse, often to a fatal issue, if not actively and judiciously treated, are not examples of concussion. The affection is one of inflammation, more or less modified by circumstances, and comes not within the pale of concussion at all. The patient has escaped this, at least it has not occurred to such an extent as to display itself by the ordinary symptoms, yet sufficient impression has been made on the brain or its membranes to predispose to inflammation of either or both of these tissues. In such circumstances, slight causes suffice to kindle the inordinate action, it may be days or weeks after the original injury; and if it occur in the cerebral tissue, it is likely to prove insidious in its progress, and dangerous in the result. For experience daily tells us how often chronic inflammation of the brain, whether the result of injury or idiopathic, advances to destruction of life, without awakening patient, friends, or medical attendant, to a sense of danger, until all room for treatment or for hope has long gone by. When the author speaks of a case in which "the most alarming symptoms followed a fall, though the head was in no visible way injured, and for two days the patient made no complaint," (p. 25,) he does wrong in naming it concussion. And more especially when he tells us of a boy who "fell down a few steps, was stunned for a short time, but soon seemed well," and who, "*several months after*, began to complain of headach, became feverish," and in whom, "notwithstanding the employment of very active depletive measures, squinting, dilated pupils, and excessively violent convulsions came on, the last fit of which continued three quarters of an hour, and ceased only with life," dissection showing "a ramollissement of the central portions of the brain to a considerable extent," (p. 19;) when he calls this concussion, he most glaringly transgresses his own rule, and confounds concussion with inflammation of the brain. We might as well say that hernia cerebri is synonymous with fracture of the cranium, false aneurism with wound of an artery, or phlebitis with venesection. We accordingly object to the following classification of the cases of concussion:

"The first class: Those cases in which alarming symptoms arise immediately on the injury being received, which either soon terminate in death, or speedily pass off altogether. The second class: Cases of concussion in which a few days will elapse after the accident, and then violent and dangerous symptoms suddenly come on. The third class:—cases in which after an accident has occurred, only slight complaints are made for a long time, and which are generally disregarded, until it is discovered that inflammation has been going on and is probably ending in a fatal effusion of serum, in softening of the brain, or in suppuration." (pp. 29-30.)

To the first only and some cases of the second would we limit the term; the others being not cases of concussion proper, but its distant and not unavoidable results.

At page 33, a case is narrated of a "very stout person" who tumbled out of a gig, and bruised his left hip, arm, and side; "his head had not

touched the ground, nor had it been struck or knocked against anything." He "complained very little, and not at all of his head." He proceeded on his journey, and "dined heartily. He afterwards got bled to nearly two pounds, and until he fainted. He returned home in the evening (a distance of eight miles), appearing scarcely at all indisposed." Next day he had no complaint, and attended his counting room as usual. On the third day he had "pain and throbbing in the head for the first time . . . . . with fits of dizziness and of suffocating flatulence." He was bled, purged, had antiflatulent draughts, &c., and after various alternations recovered. Yet this case is called one of concussion! If abscess over the olecranon had resulted from the bruise by the fall, without any head symptoms whatever, that would have had nearly as good a claim to the title.

In regard to the *symptoms* of concussion, Mr. Sharp adopts the statement of Benjamin Bell, (who, though a voluminous and somewhat ancient authority in surgery, nevertheless sometimes said a good thing, but who is much too often quoted by our author,) that the most material difference between the symptoms produced by concussion and compression is in the breathing and the pulse.

1. "In concussion the symptoms usually make their appearance immediately after the accident, though it not unfrequently happens that a considerable interval passes over before they come on; in compression there is generally a short interval between the accident and the symptoms.

2. In concussion, the symptoms if not so overpowering as soon to terminate in death, either pass away, the first signs of depression being followed by corresponding excitement, and this by complete recovery; or we may have the three stages pointed out by Mr. Abernethy, first of insensibility, second of restored animation, and third of inflammatory action. In compression, the symptoms if not relieved by active depletion, and other means, become aggravated, and death ensues either very soon, or after inflammation, and frequently also suppuration have supervened.

3. In concussion, the pulse is generally not so slow, labouring, and intermittent as in compression.

4. In concussion, bleeding sinks the pulse and the patient; in compression the pulse rises and relief is afforded.

5. In concussion, there is commonly more insensibility, followed by delirium, than in compression.

6. In concussion, perhaps vomiting is more frequent than in compression, though it often occurs in the latter.

7. In concussion, there is less frequently coma, convulsions, and paralysis, than in compression.

8. The state of the pupil is an uncertain sign; it is often dilated and insensible to light, and often contracted in both concussion and compression.

9. Sometimes at the moment of the accident, the patient has a sensation of flashes of light before his eyes, or of noise in his ears, and is as if intoxicated; sometimes the first symptoms are followed by furious and raving delirium, which, however, soon subsides; and sometimes individual senses remain affected for a very long time after the injury, as the sight, smell, taste, or hearing." (pp. 48-50.)

Touching No. 1, we have already stated wherein we disagree with Mr. Sharp. As to No. 5, the wording is sufficiently obscure, and the apparent meaning moreover seems incorrect. In other respects, the statement is valuable as being the result of his own observation; and the more so

as it accords with and consequently confirms what has been already laid down upon this subject by our best surgical authorities.

In *treating* concussion, surely no educated surgeon would now think of trephining the skull. In case, however, any one should be afflicted with a cacoethes operandi in that way, he will find the reasons for withholding his hand, clearly and succinctly stated, as follows:

"There is no depressed bone to elevate; no extravasated blood to evacuate; no tension to relieve; nor can inflammation be prevented by adding to the shock which has produced the concussion, the further injury of removing a portion of the cranium, and exposing the membranes of the brain." (pp. 52-3.)

Of the statement which follows, however, to the effect that in concussion the surgeon "will aim at being of service to his patient chiefly by *general* treatment," we disapprove, as tending to mislead the young practitioner. There is *much local* treatment. There is shaving of the head, elevation of it, and constant application of cold; leeches ultimately, or arteriotomy, if reaction has not only been established, but threatens to run into excess, and where the patient by look, gesture, movement of the hands, or muttered speech, indicates that there is pain there. But above all, there is the most important part of the local treatment, namely, complete rest of the injured organ, so far as that is attainable. In the case of a similar injury inflicted on the chest, a broad bandage is applied tightly to restrain the involuntary movements in respiration, if cough is present suitable medicines are given to prevent it, the patient is interdicted from speaking, blowing his nose, &c., the object being to limit the parts simply to what duty by them is essential in the general business of vital function. And so it ought to be in regard to the head. Not only must all general excitement be eschewed, but more especially must all sources of excitement, in which the brain is likely to be more immediately concerned, be carefully avoided. The brain quietly carries on the business which is allotted to it as its ordinary and everyday work, and our object is to see that it does nothing more. This is local treatment surely, and one of a most important kind.

We have much pleasure in stating how cordially we agree with our author in reprehending an absurd practice, unfortunately too common both in and out of our profession, of injudiciously administering stimuli during the first stages of concussion. On this point nothing can be better than the words of Sir Benjamin Brodie, as quoted by our author:

"There are, indeed, sufficient reasons why we should regard that condition of the system which approaches to syncope, as being in the great majority of instances in which it exists, conducive to the patient's welfare, and why we should wish to prolong, rather than to abridge, the period of its duration; the same blow which gives rise to symptoms of concussion, frequently occasions the rupture of some small vessels within the cranium. The same state of the system which produces an enfeebled action of the heart, is calculated to prevent the ruptured vessels from pouring out their contents; and the longer it continues, the less is the danger of internal hemorrhage. If we artificially excite the action of the heart, by the exhibition of wine and ammonia, we are in danger of inducing symptoms of pressure on the brain. If on the contrary we watch the gradual restoration of the pulse, and at the proper moment take from the arm a sufficient quantity of blood, to prevent the heart resuming its wonted action, it is probable that we may often succeed in checking or arresting an extravasation of blood on the surface of the brain, or among its membranes, which might

otherwise prove fatal. There is also the following very important circumstance which is not to be overlooked in this part of the enquiry. A state of depression is followed by a state of excitement; as the patient recovers from the former, the pulse with respect to fulness and strength, becomes raised above the natural standard, and it is evident that this affords an additional argument in favour of the practice which is here recommended." (pp. 54-5.)

There is another error, however, fully as common as the preceding, and equally dangerous, if not more so; the very opposite procedure; instantly bleeding, or attempting to bleed, in the first stage of concussion; in other words assisting the injury to put a stop to the heart's action, and so to terminate existence. To this Mr. Sharp has not alluded; and we are thence led to hope that in his part of the country such malpractice is not very prominent. Having seen not a little of it ourselves, however, in unavailing sorrow, we here take the liberty to supply the omission. It was, and still is, too much the custom to bleed, so as to appear to be doing something active in treatment, not only when the proceding has seemed to the ignorant practitioner likely to do no harm, but also when a wiser head could have told that it must do irremediable mischief. The good fortune of the first phlebotomist, Podalirius, seems to have produced in his successors an unfortunate attachment to the operation, which has been communicated from generation to generation, and from which our day is not yet wholly exempt. What can be worse than to find a patient who has just sustained a severe concussion—pulseless, and with the powers of the system all but extinguished—robbed by an ignorant or reckless man, unfortunately called to his aid, of those very powers of which he is at the time most in need, and without which the depression must sooner or later pass into extinction, or death? But, in the words of our author,

"On reaction taking place, blood may be safely taken from the system, and this abstraction of blood should be continued and repeated, in proportion to the strength of the patient, as long as the pain or excitement continue." (p. 56.)

Purgatives, it is well known, have a marked and rapid effect on the brain, diminishing the amount of its circulating fluid, and consequently depressing excitement, whether natural or accidental, of that organ. This class of remedies are thus invaluable in both warding off and moderating inflammation either of the brain or its membranes, and ought to go hand in hand with bloodletting in the treatment of those cases of concussion in which reaction threatens to be, or has become excessive. Yet Mr. Sharp but cursorily alludes to them. *Opium*, we also know, has an opposite effect, producing a determination of blood to the head, more especially accumulating the venous portion; and therefore its use is inadmissible, except under peculiar circumstances.

"Opium is objectionable, unless bleeding has been carried so far as to give rise to restlessness, and other unpleasant symptoms, when a small quantity may sometimes be found beneficial; but its effects should be carefully watched, and if not beneficial, its use should be discontinued. We are advised to combine it with antimony. (p. 57.) . . . . "A question of importance is to determine the period *when opium may be advantageously given*. In some cases there is a fortunate moment in which, if the practitioner know how to seize it, opium will act almost like a charm; whereas at another time, in the same case, it would do much mischief." (p. 65.)

This is all that is stated in regard to opium, and the statement is surely

far too vague. The author should have pointed out why this drug is in general inadmissible, and *why and when* it becomes appropriate. The former omission we have already endeavoured to supply. And we now add briefly, that "the fortunate moment in which opium will sometimes operate as a charm," is when in consequence of full or repeated bleeding, the system has been placed in that state of *nervous reaction*, marked by the peculiar jerking pulse and other symptoms well known to the practical surgeon and physician. Yet, even then, the drug must be given with a sparing hand and watchful eye, lest the untoward effects already stated should supervene.

As to the treatment of those insidious and dangerous cases, formerly alluded to, in which the head symptoms occur at some considerable distance from the period of the injury, we have the following judicious observations:

"Nothing alarming occurs for a long interval, during which the patient is not well, but he complains of little; a slight headach, occasional giddiness, sometimes a disposition to vomit, a somewhat quickened circulation, perhaps an inflamed eye, languor of mind and lassitude of body, loss of appetite and of sleep, a skin rather hotter and a tongue rather drier than natural. Any of these symptoms a superficial observer will hope to remedy in a few days; but they continue, all remedies unexpectedly fail, one disappointment is followed by another, until the practitioner, as well as the friends of the patient, are suddenly awoke as it were, and alarmed by the too surely fatal symptoms of *pressure*. Let the surgeon then be on his guard; let him anticipate, and if possible ward off the fatal blow: in these cases nothing is more dangerous than a sense of security; the slightness of the symptoms must not be considered, but their continuance, and no treatment must be thought satisfactory, but that which entirely removes every complaint.

"With regard to the particular measures to be adopted, the surgeon who is alive to the true nature of the case, will not find his difficulty arise in their selection, but in persuading his patient to submit to their adoption; here again, my own painful experience is confirmed by that of Pott: 'I am very sensible,' he says, 'that it will in general be found very difficult to persuade a person, who has had what may be called only a knock on the pate, to submit to such discipline, especially if he finds himself tolerably well. He will be inclined to think that the surgeon is either unnecessarily apprehensive, or guilty of a much worse fault.'" (pp. 62-3.)

And at another part of the volume, an instructive case is detailed, which we shall transcribe, *in terrorem*; as it affords an excellent example how great and irretrievable mischief must ever result from careless and inaccurate diagnosis in such matters:

"1814, April 19th. Mr. John Sharp was riding, and by some means his horse got from a trot to a gallop, and having lost his command, to avoid passing through the toll-gate at that speed, he quitted his horse, and by the fall bruised his knee a little, and also his head; neither of which bruises caused the least alarm, as the skin was but just broken. In the course of four or five days, some inflammation of one eye took place, but this was considered only the effect of cold; but on the *eighth* day from the fall, a violent headach came on, and on the tenth he was cupped, which removed the pain for a few days; it then returned, and a blister was applied between the shoulders; this again gave relief for a time, but the pain returned and the fever continued. A physician was called in, who considered the accident of the fall from the horse of no consequence whatever, but attributed the complaint to the bad state of the constitution, as in his opinion no symptoms from the effects of the fall appeared, (though

he had been previously a remarkably strong healthy youth;) a bracing, tonic plan was adopted, accompanied with good living; bark, jellies, &c. In about a fortnight he was pronounced out of danger, although the headach continued; and on the 14th of June, he was sent into the country for change of air; although the pain in the head was getting worse. He became much worse immediately after the journey. On the 23d he took to his bed. On the 24th a stupor came upon him, which deprived him of sense. On the 25th, his head was shaved, and a large blister applied, which discharged copiously, and in some degree diminished the stupor, but it was very far indeed from being removed; he continued insensible and helpless, and died on the 1st of July." (pp. 41-3.)

It seems at first startling to assert, that the severer forms of concussion are more dangerous than extensive fractures, and therefore ought to be more attentively watched in the treatment. The reason is obvious, however, when we reflect, that the extent of commotion in the brain by the injury, depends greatly on the continuity of the calvarium, through which the concussion is communicated to the contents; and that when once that continuity has been broken, the extent of violence to the brain is proportionally diminished, except in the case of direct injury by pressure or puncture. To confirm this practical fact, Mr. Sharp adds the weight of his experience.

As to the *diagnosis* of injuries of the head, we have the following observation: "The nature of the cause which has produced the injury will often assist us in distinguishing it; for instance, a violent shake of the whole body is very likely to produce concussion but not compression of the brain; on the contrary, a smart blow with a poker or a stone will most probably give rise to compression." (pp. 71-2.)

With the general proposition we agree, but think the illustrations unhappy. "A violent shake of the whole body" is as likely to produce compression as concussion. How often, for example, do we not see the worst of all this class of injuries, fracture of the base of the brain with hopeless extravasation and compression, occurring in consequence of violent succussion of the body by falling from a height on the feet or breech? A blow by a poker, if violent, is doubtless very likely to occasion a depressed fracture with compression, and the stroke of a stone may produce a fracture either punctured or depressed, according as the implement is angular or rounded; yet we see no reason why either, lightly administered, may not occasion simple concussion. In the same page (72) diagnosis by the direct cause is carried still further; and we are told that "a collier, while working in the pit, had a quantity of the roof over him fall on the back of his head, while he was engaged in pushing before him a small waggon; and being very much bent forward, his head was forced violently against a part of the waggon, so as to fracture the frontal bone. In this case concussion was caused by the earth falling upon the occiput, and compression from fracture with depressed bone, by the iron against which the forehead was struck." Really we suspect that our author will find very considerable difficulty in thus limiting earth and iron to separate and distinct offices, when combined to inflict lethal injuries.

Compression. Compressed brain is considered under three heads: Compression from extravasated blood, from depressed bone, and from abscess and effusion. Under the first of these, nothing new is stated; but some points both of theory and practice, of an obviously dangerous tendency, require our attention. That "sometimes blood will be extravasated

(on the brain) and produce no symptoms at all" (p. 80), is scarcely credible, unless the effusion be not only most gradual but of most limited extent. But to this we do not so much object as to what follows. After having briefly, too briefly and generally, alluded to the advantages of bloodletting, and the rest of the treatment suited to prevent increase of the pressure by further extravasation of blood, he adds, "When these means, actively employed, fail to afford relief, and the patient is evidently in a desperate condition, there is still one remedy remaining, namely, *the trephine*." (pp. 83-4.) And lest there should be any doubt about his opinion, we find this rule laid down at page 113, that "when we are called to a patient labouring under the symptoms of compression of the brain, with a contusion, or wound on the head, and there is no fracture, we are to perforate the bone in the hope of finding either extravasated blood," &c. Here we are completely at variance with our author. We are aware that it is still a point not altogether settled, whether the trephine ought to be employed in cases of compression by extravasated blood; but we hold that it ought not, as a general rule, and for the following reasons: 1. It is impossible to ascertain at what part of the brain the extravasation is situated; whether at the point of injury, or opposite, at the site of the contre coup; or at some other part of the brain, on the surface, at the base, in the ventricles, or in its substance. And surely, in such uncertainty, a surgeon is not warranted in boring here and there for effused blood, as an engineer would for water or coals. 2. It is impossible to ascertain where the extravasation is situated, in regard to the cranial contents in general, whether on the dura mater, on the arachnoid, on the pia mater, or on the brain. Let Mr. Sharp himself speak to this. "Examination after death teaches us that blood may be poured out and coagulated in any of these places (already enumerated); and when the accidents are very severe, in several, or even all of them together. *But in the present state of our knowledge they cannot be distinguished from each other by the symptoms they give rise to during life.*" (p. 75). So that, even granting that we were able to say (which we are not) that opposite a particular part of the skull extravasation of blood has taken place, we have no surety but that, in order to reach that extravasation, it may be necessary to perforate not only the skull, but one and all of the membranes of the brain; and the propriety of such a measure may well form the subject of grave consideration. 3. Supposing the blood has been reached, the probability is that we shall be unable to remove it. If fluid, it will escape spontaneously, as do pus and serum in similar circumstances; but in the great majority of cases it will be found coagulated, in the shape of a flat mass; and to remove this would require a disturbance of the brain and its envelopes, infinitely more destructive than the original mischief. At page 80 we find the following: "On the sixth day he was decidedly suffering from compression, and the trephine was applied on the injured part of the parietal bone: a coagulum of blood was found, but it was under the dura mater. He died on the eighth day." This is carelessly enough stated, yet the following inferences are plainly deducible: that the coagulum was either not reached, or if it was, it was by perforation of the dura mater, and the result proved fatal in a few days. And equally unfortunate will be found the terminations of an overwhelming majority of operations performed under similar circumstances.

4. A man with a flat coagulum compressing his brain more or less injuriously, is not improved, as to his chance of recovery, by having that compressing body either imperfectly removed, or not removed at all, while the addition is made of an extensive incision in the cranial coverings, or hole in the cranium itself, a wound of one and all of the membranes of the brain, and more or less violence by manipulation done both to these and to the organ itself. And therefore, we say again, let such cases remain as they are, contenting ourselves with assisting nature in *her* mode of cure, by absorption and mutual accommodation, and certainly refraining from the performance of an operation, which can do no good to the patient, and whose failure will certainly entail discredit upon surgery. The only circumstances in which we can suppose the operation at all warrantable, are when the blow has been received over the course of the middle meningeal artery; and when, consequently, the probability is that the blood is seated there, and between the bone and dura mater. In such a case, the diagnostic symptoms being very plain, the surgeon may be warranted in removing a portion of the skull; but, failing at this point of the search, he must not go further and penetrate the membrane. We are aware that there are a few successful cases on record in which extravasated blood has been removed by the agency of the trephine; for example, that related by Mr. Abernethy, in which the old woman, previously insensible, jumped up in bed, and very appropriately demanded "what the devil they were all about;" but in such cases the blood had fortunately remained fluid, and they are plainly to be regarded as mere exceptions to the general rule.

On the subject of *compression by depressed bone*, we have a plain and good statement as to the folly and danger of officious meddlesome surgery, and of the means whereby the practitioner is to distinguish between bruise of the scalp and depressed fracture of the skull:

"It is very necessary to be on our guard against the deceptive appearances produced by a blow on the head, causing effusion into the cellular membrane, and under the tendon of the occipito-frontalis muscle, without injuring the bone. This gives rise to appearances exactly similar to those of simple fracture with depression, that is, a soft hollow centre, surrounded by a hard ridge, communicating such impressions to the inexperienced eye and finger as will certainly deceive them. A careful examination will show, First, that the ridge is above the level of the adjacent sound bone; secondly, that the hollow is not below it; and thirdly, by pressing the finger rather firmly on the ridge, for a few moments, it will produce a pit or depression, and then the bone may be felt. In a short time the effusion is absorbed, and these deceptive symptoms disappear. With this exception, fractures of the skull are, in general, easily detected. Secondly, in a doubtful case we are not justified in making a wound, where there is not one already, merely to ascertain whether there be a fracture or not; unless urgent symptoms of pressure call for active interference to remove it. Thirdly, where there is a wound and fracture, we ought to be very careful in our use of the probe, lest we push it, or a fragment of bone by it, so as to increase the injury done to the brain. Fourthly, a fissure, or slight fracture of the cranium without depression, is not in itself dangerous, and does not require any peculiar treatment; the caution most needed, in such a case, is to avoid officiousness, and to prevent inflammation." (pp. 89-91.)

Several cases are adduced in corroboration of the opinion, already pretty well established, that operative interference is unnecessary in cases of depressed fracture, unless symptoms of compression are not only

present but of an urgent character. But sufficient attention is not paid to one of the most formidable injuries to which the head is liable, namely, fracture causing a disruption of the inner table far exceeding that of the external, usually termed "punctured fracture," as being ordinarily produced by sharp-pointed weapons, and demanding the instant application of the trephine, whether untoward symptoms have as yet occurred or not. This important class of injury is little more than alluded to; the only instance adduced is from Cooper's Surgical Dictionary, and is rather an unfortunate example, as being likely to lead to a false notion of the usual mode of production, the injury having in this case been occasioned by a musket-bullet. We shall briefly state the nature and treatment of this kind of fracture, by an apposite quotation from the article "Surgery" in the Encyclopædia Britannica, 7th edition, written, we believe, by Mr. Miller, Surgeon to the Edinburgh Royal Infirmary:

"The punctured or star-like fracture is occasioned by a sharp body striking the head with considerable force. The integuments are divided, and the surface of the bone presents an appearance of injury somewhat resembling what is often seen in ice when struck in a similar way. But this is a very slight extent of damage compared with what the inner table suffers, when the puncturing weapon has passed through the diplöe, as is usually the case. The inner table, being by much the more vitreous, is shivered into numerous spiculæ, which being driven inwards by the force of the blow, perforate, or at all events grievously irritate, the coverings of the brain, producing inflammatory action, soon affecting that important viscus, and, if not arrested, proving speedily fatal. After the infliction of such an accident, therefore, even should the patient be at the time so little affected as to walk to the surgeon to have his wound dressed, the trephine should be immediately applied to the punctured point, in order that a portion of the bone may be removed, sufficient to allow extraction of all the displaced portions of the internal plate. In no other way can we avert intense inflammatory action from the wounded dura mater, extending in all probability to the brain and its more immediate investments. Even should the practitioner be in some degree successful in moderating the more immediate mischief by antiphlogistics alone, the necessity for trephining will still remain, on account of abscess under the bone, occasioned and kept up by the spiculæ; the matter must be evacuated, and the cause of its formation must be removed. It is surely infinitely better, therefore, to operate in the first instance, and so avert all such calamities." (p. 718.)

For cases amply illustrative both of the benefit of the operation and the danger of delay in such cases, we would refer our readers to Mr. Liston's Practical Surgery, 2d edition, p. 47 et seq.

Under "*compression of the brain from suppuration*," we find the following theory of the fluid's formation: "Matter forms under the tendon of the occipito-frontalis muscle; the pericranium becomes inflamed and detached from the skull; *the inflammation is communicated through the bone to the dura mater;* that membrane is separated from the bone; pus is formed on its surface; and the patient dies, labouring under the symptoms of compression of the brain." (p. 114.) Verily this is contiguous sympathy with a vengeance; and rather a clumsy chain of reasoning in the present day. The propriety of operation in such cases is well stated, however, as also the means of diagnosis; but we cannot agree that the "soft circumscribed puffy tumour" is "a *sure* indication of the detachment of the pericranium from the outer, or of the dura mater from the inner surface of the bone." (p. 115.) The coexistence is not invariable.

And though the surgeon is not only warranted but required to use the trephine, when head symptoms are accompanied by this peculiar condition of the scalp, he must be prepared for occasional disappointment as to the object of his search. Yet let him not be easily baulked in his pursuit; if the diagnostic symptoms are very marked, let him apply the crown of the instrument again and even again. For it is to be remembered that, differently from what obtains in regard to compressing blood, if compressing pus be not evacuated, it must inevitably prove fatal; that this abscess, unlike those in other situations, can hardly make its way to the surface for discharge; and that, though such a fortunate circumstance has occasionally taken place, as by absorption and discharge into the ear, still it would be worse than folly to treat a case with the vain expectation of a similar godsend.

As to the *operation of trephining*, we pass by a condensed history of the varying principles by which it has been guided, from the time of Hippocrates downwards, and give the result of the author's own experience:

"1. Not to trepan in cases of concussion. 2. Nor in cases of compression of the brain, unless there is very good reason to expect extravasated blood immediately under the bone; fracture of the internal table; or pus, indicated by the puffy tumour, or detached pericranium. 3. Nor in children where there is depression only, without fracture. 4. Nor in simple fissures or fractures with slight depression, but without alarming symptoms. 5. Nor even in compound fractures without depression or symptoms.

"And on the other hand,—

"1. To perforate the cranium when extravasated blood or matter may be fairly expected to be found underneath; and to raise the depressed bone, in all cases of depression, whether simple or compound, where there are serious symptoms of pressure. But it still remains an unsettled point whether, 2, A simple fracture with extensive or deep depression, but without symptoms of pressure, and, 3, A compound fracture with depression, but also without symptoms, should be trepanned or not." (pp. 137-8.)

For the reasons already assigned, we object stoutly to the operation undertaken on account of extravasated blood. Nor do we agree that the last-mentioned point is unsettled; but, on the contrary, hold that all true surgeons are bound not to interfere, whatever be the state of the fractured bone, unless urgent "symptoms of pressure" have arisen (and unless loose fragments can be simply lifted away without violence), except in the case of punctured fracture, as formerly stated. Mr. Sharp tells us that he "inclines" to this rule of treatment, but we think he ought to have done more in its favour.

In regard to the performance of the operation, Mr. Sharp very properly opposes the vulgar prejudice against trephining in the immediate vicinity of the longitudinal sinus, meningeal artery, sutures, &c.; there is no risk of any accident thereby which may not be readily obviated; yet it is well to avoid the first two situations, unless circumstances compel us to do otherwise. His proposal to employ "a small chisel (such as we use in necrosis of the tibia,") as being "more expeditious" than the trephine or Hey's saw, is not likely to meet with approbation. There is no operation, in the wide field of surgery, in which speed is less demanded than in this. In most cases the patient is more or less insensible to pain; and in all he suffers comparatively little during perforation of the bone. Surely, then,

a clumsy, unsurgical, and withal dangerous instrument ought not to supersede those which are not only safe but "expeditious" enough. He properly observes that the considerable loss of blood which usually takes place during the operation is of advantage to the patient, as prophylactic; yet we would warn the profession against carrying this maxim too far; inasmuch as we have seen a temporal branch spouting during the application of the trephine, ceasing ere the conclusion of the operation, receiving no ligature, and, on reaction having commenced, again bleeding to such an extent as to prove highly injurious.

Wounds of the Brain. In his observations on wounds of the brain, our author is far from being prolific, but we thank him for the following:

"The question of removing fragments of bone or of foreign bodies can only be entertained when those fragments are so loose as to be extracted without doing further injury to the brain; the result of my own practice is in favour of their being removed; while the result of my reading is, on the contrary, in favour of their being left. There can be no doubt of the propriety of leaving, unmolested, all cases where the depressed bone, or the foreign body, a bullet for example, is so circumstanced that, to extract it, the brain must suffer still further laceration. It will perhaps appear, prima facie, that I have pursued an opposite course of practice in these cases to that recommended in the preceding chapter; but when it is considered how different the cases are—that in the former, the brain is only pressed upon, and that without its giving evidence of suffering, while in the latter, it has a sharp jagged edge of bone continuously puncturing it; it will not then appear surprising if a different mode of treatment be thought necessary." (pp. 153-4.)

The following practical observation, with illustrative case, is also of much importance, and not sufficiently attended to in general:

"Where the patient recovers with loss of some portion of the bony covering of the brain, it is highly necessary that he should be provided with a metallic covering for the part which has lost its bony protection, before the surgeon takes leave of him, and before he is allowed to go much out of doors, or to engage in any active occupation or amusement. The necessity for this precaution is rendered painfully evident by the following case:

"1828. A boy, about eight years old, received a severe blow on the left parietal bone by the fall of a coal, while employed at the bottom of a pit. I found a large wound, a comminuted fracture of the bone, and a laceration of the dura mater; he was in a state of extreme exhaustion, and in fact, it seemed a hopeless case. I removed the splintered bone, and lightly dressed the wound, and to my great surprise and delight, the boy recovered. He got out of doors, before I was aware of it, and, boylike, engaged in full play, with some of his companions; he was struck by a stone, on the very spot where the bone had been removed, and he died in a few days. I mention this painful circumstance, believing that it will produce as strong an impression on the minds of other surgeons as it has upon my own; and in the hope that we may be able so to put our patients on their guard, that a similar catastrophe may, in future, be prevented. A small plate of tin, or other metal, may be made to fit over the part without difficulty. I am at present attending a case of this kind, in which, in consequence of a blow from a stone, received nearly three years ago, several large portions of the parietal and temporal bones have exfoliated, and have been extracted, by which the dura mater is exposed to a great extent; it is now protected by a large metallic plate which is constantly worn." (pp. 153-6.)

We have now come to our last quotation:

"With regard to the imperfections in the execution of my work, which will doubtless be discovered by those who have leisure to peruse it critically, it may

suffice to remind them, that it has been written in the midst of the distractions and interruptions of daily practice; which, indeed, would have discouraged me altogether, had I not wished to put upon record the practical results of a great many observations. 'Feci quod potui, non ut volui.'" (p. 160.)

This is always the way. A book is got up and thrown off. The parent is pleased with and fond of his offspring; but not certain of its being as tenderly entertained by the rude public as he could wish, he hopes to smooth its way by apologetic allusions to "want of leisure," "distractions of daily practice," &c., and quotes Latin to protest that he has done the best he was able. But we have long since determined to disregard all such ill-grounded appeals to our critical forbearance, and certainly do not see any necessity of foregoing our custom in the present instance. Mr. Sharp has as good reason for publishing his book as the majority of authors of the present day have. Although not very cleverly written, and containing too much of other people's and too little of his own, we believe its appearance will be useful to the profession at the present moment. We think, indeed, that a surgeon who has practised where injuries of the head are "endemic," and who "has devoted a large share of his attention to the subject during upwards of twenty years," ought to have produced a work of higher value than the present. Accordingly, while we have most willingly bestowed our praise on those portions which seemed to deserve it, we have not hesitated to blame those which appeared to us not only erroneous but fraught with danger to the inexperienced reader. We trust that Mr. Sharp will take our observations in good part; and, should a second edition be attained, we hope that he will therein quote less from previous authors, and more from his own experience; and when he has studiously reconsidered the nature and treatment of the various injuries of the head, with their probable consequences, both generally and in detail, doubtless his book will then prove more interesting to the practical surgeon, safer to the student, more blameless in the eyes of the reviewer, and more worthy of himself and his opportunities.

ART. VII.

Traité des Névralgies, ou Affections Douloureuses des Nerfs. Par F. L. S. VALLEIX, Médecin du Bureau central des Hôpitaux, &c.—*Paris*, 1841. 8vo, pp. 719.

A Treatise on Neuralgia, or Painful Affections of the Nerves. By F. L. S. VALLEIX.—*Paris*, 1841.

IN the work, of which the following pages are an analysis, the author has carefully abstained from theorising, and has made few statements that are not borne out by the observations he records. The result has been a much greater degree of precision than is usually met with, and the ascertaining of several important points which have hitherto been generally overlooked. Still, though the treatise is in a great measure founded upon original observations, M. Valleix has not, like too many of his countrymen, neglected to avail himself of the labours of his predecessors of all nations, whenever they have been recorded with sufficient exactitude; but, as we shall perceive during our further progress, the num-

ber of these is much smaller than we might at first sight be inclined to suppose.

The following is M. Valleix's definition of neuralgia: "A more or less violent pain situated in the course of a nerve, and disseminated from circumscribed points; these points being the foci from which lancinating or other analogous pains proceed at variable intervals, and on which pressure is more or less painful." (p. 2.) This definition differs considerably from those in common use, and excludes all cases of what is called visceral neuralgia. Of its correctness, when applied to affections of the subcutaneous nerves, we can only judge after examining the symptoms more in detail; but we may shorly notice here the reasons which have induced our author to omit all consideration of those internal affections which are generally regarded as neuralgic. He argues that the symptoms, though in some respects analogous to those of neuralgia, differ from them in others which are no less essential. Thus, in visceralgia the seat of the pain occupies a considerable extent of the viscus, and cannot therefore be compared to the seat of ordinary superficial neuralgic pains. These visceral affections consist rather of functional disturbances of the disordered organs than of pains in the nerves which enter them; while in neuralgia properly so called, the pain of the nerve is the principal point, and the functional changes in the organs to which it is distributed are merely accessory phenomena. The nervous pains excited by cancer are indeterminate in their course, and do not present the same characters as those which are situated in a nervous trunk.

"I do not pretend," M. Valleix continues, "to say that these different pains have not numerous features in common, and do not approximate each other in their nature, but the difference of seat produces so great differences in their manifestation, progress, and appropriate treatment, that the practitioner is obliged to distinguish them carefully. In general pathology, it would perhaps be right to bring out their numerous affinities; in this work, in which facts are chiefly regarded in a practical point of view, I have thought it proper, on the contrary, to render their differences prominent. In other words, finding in the principal nervous trunks which ramify upon the surface of the body, an affection whose characters are clearly defined, I have formed a pathological group, upon which an exact and rigorous observation may be employed with every chance of success. This group is constituted by the NEURALGIÆ, distinguished from the *visceralgiæ* and *symptomatic nervous pains.*" (pp. 4-5.)

Whatever may be thought of the general arguments upon which this determination is founded, we are assured that M. Valleix has done wisely in acting upon it in the present instance, and that we are indebted to it for a much better book than would in all probability have been produced had he allowed himself to follow the more ordinary plan.

In proceeding with our analysis, we shall first take a general view of the subject, and then pass to the consideration of the different forms of neuralgia, reversing thus the order which our author has followed; and in doing this, we shall confine ourselves almost exclusively to those points which have been either omitted or differently represented by other writers, passing over, with little if any notice, such features of the disease as are generally recognized.

SITE. First, then, as to the seat of neuralgia. It is admitted on all hands that the superficial nerves of the body are of all others the most liable to these painful affections; but it appears that some points of their

course claim a decided preeminence in this respect. According to M. Valleix's observations, these points are, with few exceptions, the following: 1. *The place of emergence of a nervous trunk*, as at the supraorbital and infraorbital foramina, where the branches of the fifth pair emerge upon the face; at the groin, where the crural nerve passes outwards; and at the lower part of the occipital bone, where the occipital nerve makes its exit. 2. *The points where a nervous twig traverses the muscles, to ramify in the integuments*, e. g., the passage of the posterior branches of the spinal nerves, &c. 3. *The points where the terminal branches of a nerve expand in the integuments*; for instance, the anterior extremity of the intercostal nerves, the extremity of the collateral nerves of the fingers, &c. To these may be added the situations where several branches of different nerves unite by their extremities, the most important of which is in the neighbourhood of the parietal protuberance, where the branches of the frontal and great occipital nerves are intermixed. 4. *The points where nervous trunks become superficial during their course*, as where the ulnar nerve turns round the internal condyle, and where the peroneal nerve turns round the head of the fibula. Of all these the points of emergence appear, upon the whole, the most liable to be affected, but in none of them can any normal structural variations be detected to account for this singular election.

CHARACTER. The nature of the pains in neuralgia is exceedingly various; but in the majority of cases two distinct kinds can be easily recognized, one dull, heavy, and constant, the other sharp, lancinating, and either irregular or intermittent. The attention of practitioners has been greatly limited to the latter of these; but if M. Valleix's observations be correct, the former is at least of equal importance, notwithstanding its comparatively less severe character. Cotugno held the same opinion, and regards it as the most essential element of sciatica, (p. 660.) It is generally compared by the patient to the sensation of tension, firm pressure, or the pain of a contusion, but is occasionally so slight that the patient will not allow its existence, until his attention is forcibly directed to it by his medical attendant. M. Valleix believes that it is never absent even in the most complete remissions of the attacks. It is most commonly found in the points noticed above, and these, our author affirms, are invariably, or with few exceptions, more or less morbidly *sensible to pressure*. As this opinion is decidedly opposed to the ordinary doctrine, and moreover as it forms the most characteristic feature of the work before us, we shall make no apology for examining it at some length.

If we consult the various authors who have written upon the subject of neuralgia, we shall find that their sentiments upon this point are far from being uniform. According to some, *slight* pressure upon the nerve aggravates the pain, while *firm* pressure relieves it; others believe that pressure is never painful; while, according to others, again, it is in rare cases only that pressure produces any effect. The former is perhaps the most generally received opinion; it is adopted by one of the most recent writers upon the subject of nervous diseases, to whose work we shall have occasion to refer more than once in the course of this article.* M. Valleix affirms that, *with one exception only*, (a case of sciatica which had only

* Romberg, Lehrbuch der Nervenkrankheiten, Band i.; Berlin, 1840.

existed from twenty-four to thirty-six hours, and was extremely slight, (p. 518,) he has in every instance succeeded in ascertaining the existence of more or less severe pain by pressure upon certain parts of the nerve. (p. 66.) This enormous proportion can scarcely be the effect of accident or mere coincidence; and the discrepancy between our author and other writers is susceptible, as we shall presently see, of a very different explanation. In some cases pressure merely increases the dull, constant pain, but in others it gives rise to violent twinges. A very slight touch is often sufficient to excite the most acute suffering, as many writers besides M. Valleix have borne witness, and as the experience of all of us testifies; while in other cases, the finger must be firmly pressed upon the part before any effect is produced. The *extent of surface* which presents this phenomenon is sometimes very small, not more than one or two *centimetres** in diameter, but occasionally it is much larger. At a short distance from these points, there is often a complete absence of pain under every degree of pressure, and this is doubtless one of the causes which have given rise to the great differences of opinions; for it can be readily conceived that painful points of so limited an extent may easily escape notice in a superficial examination, and also that pressure by the whole surface of the hand may produce no effect, because it will act in a great measure upon parts devoid of any unnatural sensibility. The only method, therefore, by which this essential point of diagnosis can be satisfactorily established, is by carefully pressing with the extremity of the finger along the entire course of the affected nerve, and of its principal ramifications, even though the patient should indicate a few points merely as the seat of his malady: for it is of importance to observe that, in some cases, there may be pain on pressure, where there is no spontaneous uneasiness, and *vice versâ*. The value of this sign will be abundantly evident as we proceed in our analysis.

It is necessary also to observe that, when the existence of acute pain in any particular spot has been ascertained, pressure in the same place, a short time afterwards, may fail in producing any effect; but this absence of pain will be found only of temporary duration. M. Basseau first noticed this fact with regard to intercostal neuralgia, and our author has been able to verify his observations. (p. 669.) It must, moreover, be always borne in mind, that there are some parts of the body, such as the anterior wall of the thorax, and the scrobiculus cordis, which are naturally painful under slight pressure in certain individuals, especially in those who are emaciated or of a nervous temperament; and in these cases an inattentive practitioner might easily be led into error. It is therefore necessary, before forming any opinion, to press with equal force upon the opposite side of the body. If the neuralgia be simple, and the affected side much more painful than the other, the inference will be easy; and even when the disease is double, there is generally sufficient difference between the intensity of the pain on the two sides, to establish this diagnosis; especially as in the majority of cases there will be found intervening spaces, in which pressure will produce little, if any suffering.

The pain caused by pressure generally bears a direct proportion to the intensity of the disease; it is also augmented during the paroxysms, and

* A centimetre is two fifths of an inch nearly.

diminished in the intervals of calm. It was asserted by M. Regnier and has been again more recently affirmed, that there is a great difference between the various species of neuralgia, in reference to the effects of pressure; that, for example, pain is almost constantly produced by pressing upon the affected nerve in sciatica, while in neuralgia of the face pressure often gives relief. M. Valleix has not observed this difference: in all the cases of neuralgia of the face which he has examined, he has found pressure give decided pain; but it must be remarked that the intermissions in this species are much more complete than in other neuralgiæ, and the pain excited by pressure often much slighter; and this may probably have given rise to the opinion. Everything, as he justly observes, depends upon the mode in which the pressure is applied. (p. 672.)

With regard to the lancinating pains our author observes, that in every case which he has examined, they have originated from one or other of the points occupied by the dull, constant pain above described, or in which pressure was painful. These, therefore, may be regarded as centres or *foci*, from which the pain shoots, with more or less violence and at variable intervals, to the neighbouring parts. Sometimes the pain darts from one point to another, without affecting the intermediate space; at other times it sets out at once from several foci. The following table (p. 662) shows the relative frequency of these different kinds:

1. Lancinating pains propagated from one point to another, without affecting the intervening course of the nerve . .	9
2. Lancinating pains felt along the nerve	34
3. Ditto fixed and disseminated	16
	59

The direction of these lancinating pains is various; most commonly they follow the course of the nerve; sometimes they pass in the opposite direction, and when this is the case, the term *neuralgia ascendens* has been of late applied to the disease, though the fact was well known to Cotugno. Frequently the pains dart in all directions. The following varieties as to direction occurred in 109 cases: in 62 the lancinations followed the course of the nerve; in 16 they were fixed and disseminated; in 6 ascending; and in 11 they passed sometimes in one direction and sometimes in another; in 5 they proceeded both upwards and downwards from a middle point; in 6 they followed no determinate direction; and in 3 they did not exist at all. It would appear that upon the whole, the lancinations are most violent in neuralgia of the face and in sciatica.

Course, duration, and termination of the disease. The paroxysmal character of neuralgia is well established; Romberg regards it as the distinguishing feature of this class of diseases, (loc. cit., p. 12,) and M. Valleix has only met with one case in which the total absence of paroxysms was clearly ascertained; but opinions are still divided regarding the important question of the periodicity of the attacks. Out of 199 cases of all varieties of neuralgia, this symptom was satisfactorily made out in 20 only. It would seem that it is much more frequent in neuralgia of the face than in any other species, for our author has observed it in 10

out of 42 cases of that kind, and in 9 only out of 157 cases of the other varieties :* it is also well worthy of notice, that quinine effected a cure in about one half of these truly intermittent cases, while in others, precisely similar in every respect but this one, it totally failed. (p. 680.)

Much has been often said of the rapid accession of neuralgic affections. M. Valleix is of opinion that this only holds good with reference to the attacks of lancinating pain, for out of 71 cases in which this point was accurately noticed, in 38 the disease came on slowly, in 24 gradually but with greater rapidity, and in 9 only did it become suddenly violent; (one of these was very remarkable from the extreme obstinacy and violence of the disease. p. 115.) The invasion of the different parts of the nerve is also progressive, not instantaneous.

Sudden atmospherical changes are generally supposed to have a decided influence upon the intensity of the attacks; according to our author, depression of temperature has a remarkable effect in augmenting the violence of the pain, but other variations were apparently inoperative.

The *duration* of neuralgia is so essentially variable, that no mean term can be laid down. As to its *termination*, M. Valleix takes a more favorable view than the majority of practitioners, for he speaks of more than three fourths being radically cured. We cannot but think this is too sanguine an opinion, and the great liability of relapses ought assuredly to render our prognosis very guarded upon this point.

In regard to the essential *nature* of neuralgia, we are perfectly inclined to believe with our author, that the evidence we at present possess will warrant one opinion only, namely, that it is a functional affection of the nervous system, meaning by that term that its organic causes are not appreciable by any of our present means of investigation. The theories of inflammation, irritation, hypertrophy, &c. are totally devoid of anything like a satisfactory foundation; they have little value beyond that of affording amusement to the imaginative faculty.

CAUSES. Neuralgia is most frequent in the prime of life, but neither infancy nor old age are altogether exempt from it. M. Valleix relates a case of lumbar neuralgia in a girl of five years, and Dr. Rowland has given the history of another aged two years only, who was affected with facial neuralgia. (Rowland on Neuralgia, p. 12.) In a table drawn up by our author, the three decades included between the ages of twenty and fifty present almost equal numbers, including nearly two thirds of the whole (296 cases.) Opinions are strangely divided with reference to the comparative liability of the two sexes; Fothergill and others maintaining that females are much more frequently affected, while Thouret, who examined the subject with much care, affirms that two thirds of the whole number of cases are of the male sex. M. Valleix believes that, as a general rule, both sexes are almost equally liable, the female preponderating in a very slight degree, but he has shown that there is considerable variety when the different species of neuralgia are examined. Thus in cases of sciatica and crural neuralgia, the proportion of males greatly exceeds that of females, while precisely the opposite obtains in the intercostal and lumbo-abdominal varieties, (Vide table, p. 691.) He

* These are the exact numbers given in the original; there is evidently a mistake in one of the statements, probably in the former.

has also ascertained that before the age of thirty, females are more liable to the disease than males, but the tendency is rather the other way afterwards. These results of course require confirmation from the examination of larger numbers, before the point can be regarded as satisfactorily determined; we give them here in order that the attention of enquirers may be more closely directed to the subject.

Our author's observations on the influence of constitution, temperament, hygienic conditions, food, and professions are too limited to be of much value; but all these points deserve more notice than they have yet obtained. Of all *exciting* causes, M. Valleix believes that prolonged exposure to cold is the most frequent, but this portion of his work is extremely meager, and we shall therefore pass on to the article

DIAGNOSIS. Neuralgia may be confounded with other affections seated in the nerves; the most important of these is undoubtedly *neuritis.* The distinctive marks generally laid down between the two affections are the following: in neuritis the seat of the pain is more fixed, the duration of the disease is shorter, and the remissions less pronounced; the lancinating pain returns more gradually, there is more tendency to paralysis, and the pain is increased by pressure. M. Valleix believes, that, with the single exception of the greater tendency to complete paralysis, all the other symptoms are common to the two affections, and in this he appears to be borne out by the history of a very interesting case, in which the sciatic nerve was injured during a severe labour, where the forceps were required to complete the delivery: but still he leaves the question very much in doubt. Unless all the observations recorded in this book be incorrect, pain on pressure is not a distinctive mark, since it equally exists in pure neuralgia; but we would suggest, that probably a further examination may show that in neuritis the pain excited in this way may not be so remarkably circumscribed; it would seem more natural that the whole extent of the affected part of the nerve should present the same symptom. In this opinion we are confirmed by the observations of Professor Romberg, who remarks that, in the affection of which we are speaking, there is severe pain *along the whole course of a nerve*, which is increased by external pressure or motion. He adds, that when the nerve is subcutaneous it can be felt to be hard and enlarged, and that as the disease advances, *anæsthæsia* is gradually produced, while neuralgia, on the contrary, is characterized by the perfect uniformity of the symptoms throughout the entire course of the malady. (Loc. cit. pp. 16 and 29.) When the disease is acute the existence of fever will assist the diagnosis.

Pricking, *laceration*, and *contusion of nerves*, give rise to lancinating pains, which closely resemble those of ordinary neuralgia, and are generally regarded as such. M. Valleix expresses himself as unable to give a decided opinion from the want of sufficiently detailed observations; and applies the same remark to certain cases of neuroma, and to those instances of violent pain after amputations, which appear to depend upon a diseased condition of the extremities of the divided nerves. We would take the opportunity of observing here, that it appears to us a most unhappy tendency, which is evidently gaining ground, to describe all severe pains situated in the course of a nerve by the common term *neuralgic*; such an appellation is undoubtedly correct enough in a mere etymolo-

gical point of view, but if it be true that the disease denominated neuralgia has certain specific characters, it is manifestly unadvisable to employ the same name where the existence of these has not been established.

Neuralgia may also be confounded with *rheumatism*, but in general it can be pretty easily distinguished by the greater extent of surface affected in the latter disease, and by the great increase of pain caused by contractions of the muscles. In cases of acute articular rheumatism there can be no room for doubt.—We pass over all other diseases which may be mistaken for neuralgia, because they will be more profitably noticed in considering the various species of this painful affection, to which we shall now proceed.

TRIFACIAL NEURALGIA. M. Valleix commences his description of this variety by a sketch of its history, of which we shall take no further notice than simply to remark that it has the merits of being full, concise, and impartial; nor shall we delay our progress by dwelling upon the anatomical distribution of the fifth pair of nerves. The number of cases analysed by M. Valleix is fifty-five, twelve of which are original, and the others borrowed from various authors. In speaking of these, our author makes a remark, the truth of which will be readily admitted by all who have at any time attempted to deduce general principles from recorded observations:

"It is sufficient to study the history of neuralgia, in order to be convinced how unfounded is the general opinion of the richness of our science in regard to observations. Facts are doubtless abundant, and by searching various authors, and especially periodical publications, one may collect a large number; but what is the value of mutilated facts, deficient in the most necessary details, and very often presented for the purpose of establishing a theory? We are not therefore wrong in crying out for new facts every day; but it must be understood, that what is required is not such records as the majority of our predecessors have left behind them, but facts observed with care and strictness, by which alone the science may be advanced." (pp. 20-1.)

M. Valleix believes that neuralgia of the face is less common than the sciatic dorso-intercostal varieties, in which opinion he differs from other authors: it is not easy to say with whom the truth lies. It is somewhat more common with females than with males, but the difference is extremely slight. In most of the cases examined by our author, there was more or less disturbance of the menstrual functions, but this often supervened upon the disease, and therefore could not be regarded as a cause. He has never known the disease have either a metastatic or a syphilitic origin; nor has he met with any case produced by external violence, or dependent upon caries of the teeth, though both of these are well known causes. Both sides of the face seem equally liable to be affected, but the pain is often most severe when seated on the right. Of forty-six cases, twelve only were double. Two kinds of pain may be distinguished in this as in the other species of neuralgia, one dull and constant, the other lancinating. M. Valleix finds that the first does not occupy the entire course of the nerves, but is disseminated in different points of the three principal branches, in the following manner.

A. *In the course of the ophthalmic branch.* 1. At the *supra-orbital foramen.* In eleven cases out of fourteen there was constant pain in this locality over an extent of surface which, in all but two instances, did not

exceed two or three centimetres. In two other cases the seat of the pain was a little above the foramen, but still in the course of the frontal nerve. M. Valleix denominates this the *supra-orbital point*. 2. In two subjects pain existed in a more undefined situation along the rim of the orbit, and in the upper eyelid. Three cases are mentioned from other authors, in which the same is vaguely noticed. M. Valleix calls this the *palpebral point*, and believes that the palpebral twig of the nasal branch is the part chiefly affected. 3 In three subjects there was pretty severe pain in a circumscribed spot at the upper part of the side of the nose, where the infra-trochlear nerve emerges from the orbit. This *nasal* point is noticed, but not defined, in sixteen cases drawn from various sources. 4. Several of M. Valleix's patients complained more or less of pain in the ball of the eye; one of these was not affected in any of the other points mentioned. In eight cases related by different authors the same fact is noticed, and in five of these the other portions of the ophthalmic branch were not the seat of any suffering. M. Valleix observes, that he has never been able to satisfy himself of the existence of pain in the nerve while inclosed in its bony canal, or lying in the interior of the orbit; it is not attacked by the disease until it becomes superficial.

B. *In the course of the superior maxillary branch.* 1. At the *infra-orbital foramen.* Pain was only observed in this point in three cases out of fourteen; it is therefore of less importance than the preceding. M. V. has only found it mentioned six times by other authors. This point varies in diameter from four to five centimetres. 2. *On the cheek.* In two original cases, and in four borrowed ones, a painful point is noticed on the lower edge of the *malar bone.* 3. In seven out of sixteen cases the gums and teeth of the upper jaw exclusively were complained of by the patient as being the seat of constant pain, and in nine others both jaws were affected alike. 4. M. Valleix has never found the upper lip particularly painful, but mentions two examples from other authors. This *labial point* he considers of little importance. 5. The same remark applies to pain in the *palate ;* four remarkable examples of which are however noticed by other writers.

C. *In the course of the inferior maxillary branch.* 1. On the *temple.* In six cases tolerable severe pain was felt in a circumscribed point, not more than two centimetres in diameter, at the lower part of the temporal region, a little in front of the ear. This *temporal point* deserves particular notice. Several nervous branches ramify here, but the largest and most superficial is the temporal branch of the inferior maxillary nerve; M. Valleix regards it therefore as the seat of the affection, both from general reasoning, and from the fact that in a patient under his care at the time he was writing, he finds a painful spot immediately in front of the tragus, at the precise point where this nerve emerges from the parotid gland. 2. In one subject only has he found a painful spot in the situation of the *temporo-maxillary articulation.* 3. In five cases M. Valleix has discovered the existence of pain in a spot about two centimetres in diameter, in the situation of the *mental foramen,* and in all these the *temporal point* above noticed was very distinct: a corroborative proof of the correctness of his opinion regarding the former. 4. In one of M. Valleix's cases the side of the *tongue* was painful, and four other cases are on record. In all these the disease was of a very violent character. 5. In

the case just mentioned there was also pain in the *lower lip*, near the foramen menti.

D. *In the points where the branches of the trigemini anastomose.* Several of the points above noticed, as the *nasal* and the *labial*, might be referred to this division; but M. Valleix remarks that, in the face generally, the points where the nerves emerge from deep-seated parts to ramify in the skin are more severely affected than their ultimate extremities; the contrary, however, is the case in regard to the point which we are now to consider, and which our author terms the *parietal point*. It is most commonly situated a little above the parietal protuberance, and varies in extent from three centimetres upwards. He has met with it twelve times, and believes that it will always be found to exist when the disease has any degree of violence, unless the inferior dental nerve be alone affected. It is situated at the junction of the frontal, superficial temporal, and suboccipital nerves. This point has been noticed by other authors, but its extent not defined.

Our author next proceeds to examine the interesting question of the dissemination of the disease, and with the following results:

Painful points in all the three branches	.	24 times.
,, in two branches only	.	11 ,,
,, confined to one branch	.	10 ,,
		45

It appears, therefore, that it is much more common to find the affection seated at the same time in several parts of the trifacial nerve, than limited to one division only. When the latter was the case, the inferior dental nerve was most frequently the diseased part. In point of fact, therefore, Chaussier's minute subdivisions are of little practical importance.

As to the point first attacked, M. Valleix remarks that out of thirteen cases the pain commenced at the supraorbital foramen, on the side of the nose, or in the upper eyelid, in eleven, and twice in the course of the inferior dental nerve, where it remained fixed. He has never known the disease originate in any branch of the superior maxillary nerve. In examining the cases recorded by other writers, he finds only nine presenting sufficient details to establish this point, and in five of these the affection first made its appearance in one of the branches of the ophthalmic, while the remaining four commenced in and were limited to the inferior dental. Professor Romberg, on the contrary, affirms that the superior maxillary is the most frequently affected, and next to that the ophthalmic, but he does not give any numerical statements. (Loc. cit. p. 34.)

We proceed now to the consideration of another most important symptom presented by these foci. *In all the cases* which have come under M. Valleix's own observation, pressure, properly exercised by the finger, was productive of pain in one or more of the points above noticed. It is to be lamented that the number of these cases is so small, only fourteen; but the undeviating uniformity presented by them is certainly very striking, and calls for more careful attention on the part of succeeding investigators. Out of thirty-two cases recorded by other practitioners M. Valleix has found fifteen in which the same symptom was noted, and it is

a remarkable circumstance, and one strongly corroborative of the correctness of the view taken by our author, that the more detailed and exact the observations are, the more frequently has this sign been detected. Such writers as are contented with the simple assertion that the pain occupied one side of the face, &c., will never add much to our knowledge of this most troublesome malady. M. Valleix believes that such cases as do not present the symptom now under consideration must be regarded as mere exceptions: we are inclined to recommend a much more extended series of observations before laying down so general a rule. The narration of the case which follows these remarks (p. 68 et seq.) is exceedingly interesting, and we would recommend the style in which it is drawn up as a model for future enquirers; but it is much too long to be transcribed, and we shall content ourselves with the notice of one feature which is peculiarly worthy of attention. The unfortunate sufferer, during the paroxysm of pain, was in the habit of pressing her open hand firmly upon the left side of the head, and appeared to receive comfort from it, but the application of the extremity of the finger to the point where the frontal nerve emerges immediately increased her suffering, and *the pain became intolerable when the part was firmly pressed.* This fact speaks volumes; an equable pressure over the whole surface gave great relief, while in one small spot, only a centimetre in diameter, the contact of the finger, even when *firmly* applied, was perfectly unendurable. Have we not here an explanation of the discordant results of former investigations?

Nor is it merely in a diagnostic point of view that this sign is valuable. M. Valleix affirms that as long as pressure upon any of these points continues painful, there is great danger of a speedy recurrence of the attacks; it is the last symptom which gives way, and the cure may be regarded as complete (for the time?), when the finger can be applied to them all without producing more discomfort than it always does in the situation of even the most healthy nerve.

In the majority of instances the seat of this artificially produced suffering corresponds with that of the constant spontaneous pain; but this rule is liable to a few exceptions, as will appear by the following statement. Out of thirty-five cases, in twenty-six the two species of pain had the same locality; in four there was pain on pressure where no spontaneous pain existed; and in five the contrary obtained. It should be remarked, however, that all these exceptions are found in the cases recorded by other authors: in M. Valleix's own observations the two kinds were invariably coexistent.*

In the description of the pain produced by motion, mastication, deglutition, &c., we find nothing peculiar. M. Valleix has only met with one case of facial neuralgia in which lancinations were entirely wanting; but not all his patients experienced them at the commencement of the disease, and in several they ceased before the cure was effected: he therefore does not regard them as absolutely essential symptoms. (p. 83.)

We pass unnoticed the other anomalous feelings which are so fre-

* From a slight *personal* experience of this form of neuralgia, we are enabled to bear testimony to the existence of the supraorbital, nasal, malar, and (less distinctly) the mental points. And we can also affirm the correctness of M. Valleix's statement that these points are most painful upon pressure, when the spontaneous pain is greatest.

quently the subjects of complaint in neuralgic patients. The state of the eyes, ears, nasal passages, &c., deserve attention on the part of practitioners, but there is nothing in our author's account which need detain us. In five cases the bulbs of the hairs were the seat of acute pain, and a remarkable case of supraorbital neuralgia of the left side is quoted from Bellingeri, in which the hairs of all the anterior part of the affected side became more bristly, and thicker, with a rapid growth. The disease was cured by section, and subsequent cauterization of the nerve, and then the hairs again returned to their normal condition. The same author mentions the occurrence of crepitation on the affected side of the head. M. Valleix has seen two cases in which abundant *salivation* was produced: André affirms that he always met with it.

Our author next proceeds to examine the importance of *convulsions* or *spasms of the face* as diagnostic signs, and comes to the conclusion that they cannot be regarded as essential; in which opinion we believe the majority of observers will be fully inclined to coincide; but to this point we shall have occasion again to recur.

The affection we are now considering is frequently complicated with other species of neuralgia, the occurrence of some of which may probably be accounted for by the existence of nervous anastomoses while in others this explanation will not hold. M. Valleix has never seen the disease *suddenly* transferred from the face to another part of the body, but undoubted instances of this nature are to be found in the annals of medicine, and are of no little interest. His remarks upon the state of the circulatory, digestive functions, &c., need not detain us. He only met with four cases in his own practice in which periodicity was well marked, but mentions that Dr. Renner, in the space of fifteen months, attended thirty-two cases of facial neuralgia, all of which presented a more or less distinctly periodic character, and yielded to the influence of sulphate of quinine. Romberg states that periodicity is most frequently observed when the supraorbital nerve is affected, that it is generally of the quotidian type, less commonly of the tertian, and never of the quartan. He asserts also that the disease is generally of shorter duration when this symptom is observed. (Loc. cit. p. 36.) According to M. Valleix's observations it is not correct to assert, as was done by Frank, that the paroxysms are more common during the night than the day. It is of importance also to bear in mind, that in the intervals of the exacerbations there is generally still a dull pain in the points above noticed; a *perfect* intermission is regarded by our author as a very rare exception.

We shall say nothing of the anatomical lesion occasionally observed; M. Valleix has made no addition to our previous knowledge, vague and unsatisfactory as that is. In regard to the *causes* of the disease we find nothing peculiar in the work before us; the subject is involved in great obscurity, and demands much careful observation before any positive assertions can be hazarded.

DIAGNOSIS. Our author believes that nervous headach (migraine) may be distinguished from neuralgia by its shorter duration: we can scarcely regard this as a sufficiently diagnostic mark, and are much inclined to believe that, in many cases, the seat of the affection is the superficial nerves of the scalp. *Clavus hystericus* is regarded by M. Valleix as a species of neuralgia.

We now arrive at a question of no little physiological interest. *Can the portio dura of the seventh pair be ever affected with neuralgia?* Considering the functions of this nerve, one might be readily induced to answer at once in the negative; but, as M. Valleix well remarks, it does not necessarily follow that, because it is physiologically insensible, it must continue the same when affected with disease: we shall, therefore, give a short abstract of the opinions entertained by various writers. In doing this, however, we shall not enter into the discussion whether the marks of ordinary sensibility exhibited by some portions of the nerve are or are not due to its intimate connexion with the ramifications of the fifth pair, for there are few, we apprehend, in this country at least, who have any doubts whatever upon the subject. The majority of the descriptions of this supposed affection of the portio dura are sufficiently vague: some observers inform us that the pain extends along the course of the nerve, commencing at its point of emergence; others merely affirm that it *appears* to follow this course; while others again are contented with saying that they have seen cases of neuralgia of the facial nerve! What confidence can be rationally placed upon such loose and uncircumstantial notices? M. Reverdit, however, goes much farther than any others, for he recognizes three varieties of this affection. In the first of these, the pain commences towards the back of the auricle, extends to the temple, the cheeks, the nose and the lips, and *appears more superficial than in cases of trifacial neuralgia;* in the second, the pain passes in one direction towards the chin and neck, and in the other stretches from the auricle to the shoulder; in the third, it extends to the mastoid region and occipital bone. Now, with reference to these assertions, there is an observation which will naturally strike the reader, namely, that as the extremities of the facial nerve and the fifth pair occupy the same localities, it does not follow that pain seated in the temple, cheek, chin, &c., must of necessity be referred to the former. As to the pain in this affection being more superficial, any one who has paid the least attention to the descriptions of their ailments given by patients, will know at once how much value there is in this declaration. The only statement, therefore, of any real importance is that which refers to the point where the pain commences, but the difficulty will be greatly removed even in this case, if we recollect, that a large nerve, the posterior branch of the second cervical pair, passes close by this point to ramify in the hairy scalp, where its branches anastomose with divisions of the fifth pair. M. Bérard the elder, relates the case of a young man with disease of the cervical vertebræ, who suffered from intolerable pain in the back of the head, and after death a reddish gangliform tumour was found at the origin of this nerve, which had evidently been the cause of these symptoms. Several cases are also quoted by our author in which the pains commenced precisely in the situation of this posterior branch, and then radiated to different parts of the face, (p. 163:) it is impossible to quote them here, without occupying a greater space than we can afford, but we would earnestly recommend their attentive perusal. M. Valleix remarks that in many of the instances of this kind which he has observed, (and which he includes under the term *cervico-occipital neuralgia*, to be presently mentioned,) the patients invariably informed him at first that the pain commenced behind the ear, and passed from thence to the face; but a

more close investigation, especially by means of pressure, convinced him, 1, That the point of origin was not immediately behind the ear, but between the mastoid process and the vertebral column; 2, That the lancinations passed from that spot upon the occipital bone, and reappeared at the parietal protuberance; and 3, That in this place there was a painful point, from which lancinations radiated to different parts of the face, and gave rise to all the ordinary symptoms of *tic douloureux*.

This must conclude our notice of neuralgia of the face; we defer the subject of treatment until we have reviewed the other species, when we shall have the advantage of considering the whole at once.

CERVICO-OCCIPITAL NEURALGIA. The existence of this variety had been suspected by several observers, before M. Bérard gave an accurate delineation of the symptoms, still retaining, however, the name tic douloureux. The nervous branches concerned in this affection are those which belong to the posterior cervical plexus, especially the posterior branch of the second pair, called by Arnold the *great occipital nerve;* and several branches of the anterior cervical plexus, as the *superficial cervical*, the *auricular*, the *mastoid* or *small occipital* of Arnold, and the *supra-clavicular* and *acromial*. In this species of neuralgia, which is of rare occurrence, the lancinations ordinarily commence from a point at the lower part of the occipital bone between the ear and the spine, and pass either upwards over the vertex towards the face, in which case the fifth pair generally becomes involved, or downwards along the neck to the shoulder. Sometimes they are arrested at the parietal protuberance; and occasionally, instead of commencing as above described, they set out from the upper part of the mastoid process, or from the parietal protuberance. The following are the points in which pressure developes pain: 1, and most severely, at the emergence of the *great occipital nerve;* 2, lower down, between the anterior edge of the trapezius and the posterior edge of the sterno-cleido-mastoideus, where the principal branches which form the *superficial cervical plexus* make their exit; 3, the *parietal point* noticed before when speaking of facial neuralgia; 4, on the *mastoid process* below the lobule of the ear; 5, lastly, an *auricular point* upon the concha. These different points are not always so accurately defined as in the other species, but this is easily accounted for by the mode in which the nerves are distributed.

CERVICO-BRACHIAL NEURALGIA. Under this head M. Valleix includes every neuralgia which is seated in the brachial plexus, and in the posterior branches of the last cervical pairs, whatever nerve may be more especially affected. We shall not delay our progress by describing the anatomy of the parts, but content ourselves with calling the following facts to the reader's recollection: 1. That the nerves which form the brachial plexus give off a series of posterior branches, which traverse the muscles, and enter the skin near the spine at the lower part of the neck. 2. That the brachial plexus becomes superficial in the axilla. 3. That before furnishing its terminal branches, the plexus gives off the *supra-scapular* and *circumflex* nerves, the former of which is remarkable from its position upon the spine of the scapula, and the latter for its course round the surgical neck of the humerus, and for the cutaneous branches which traverse the deltoid. 4. That the *internal cutaneous* nerve, which is superficial for a

considerable distance along the inner part of the arm, supplies the integuments over the internal condyle, and the anterior part of the wrist, and also gives off a filament which often passes in front of the median basilic vein, and may be injured in venesection. 5. The *median nerve* is chiefly interesting where it passes through the pronator teres, where it gives off the palmar cutaneous nerve, and in its terminal branches along the sides of the fingers. 6. The chief points to be observed in the *ulnar nerve* are its positions behind the internal condyle, its passage between the piriform and unciform bones, and its distribution to the sides of the three last fingers. 7. In the *radial nerve* we have to remember its course round the humerus, and the cutaneous branches which it gives off at its entrance into and exit from the humeral groove.

From so extensive a distribution of nerves it may be readily anticipated that the parts affected by the pain must vary considerably; such indeed is the case, and hence pathologists have divided the species into a number of varieties; M. Valleix objects to this method, because he believes that in most instances, even when the disease appears decidedly localized, a more attentive examination would reveal the existence of pain in other branches than those chiefly affected. The subject appears to us of little moment, it is rather a question of convenience than anything else.

Out of eleven cases the disease was situated on the left side in seven. M. Valleix has never found it double.

Points painful on pressure are as easily recognized in this as in other species of neuralgia, and of these the following are the most remarkable: 1, an *axillary* point; 2, an *epitrochlear*, where the ulnar nerve turns round the bone; 3, a *cubito-carpal*, where the same nerve passes in front of the carpus to the hand; 4, where the radial nerve turns round the humerus, and another on the same nerve towards the lower part of the radius; 5, an *inferior cervical* point at the lower part of the neck, a little to the outside of the cervical vertebræ; 6, a *post-clavicular* point within the angle formed by the clavicle and acromion; 7, a *deltoid* or *circumflex* point at the middle and upper part of the deltoid. The number of these which are affected will, of course, vary in different cases; the most circumscribed are those behind the internal condyle, and in front of the lower part of the ulna and radius.

M. Valleix's experience as to the nerve which is most frequently the seat of lancinating pains is in perfect accordance with the results of former observations. There can be no doubt that this preeminence is justly claimed by the *ulnar*. It is needless to describe the course of the shootings. We would again direct the reader's attention to the very interesting cases which our author has collected.

DORSO-INTERCOSTAL NEURALGIA. Nicod in 1818 first called the attention of practitioners to this species, the existence of which had, however, been previously suspected by Chaussier; since then it has been frequently noticed, and described under a variety of names, which we need not mention. M. Valleix has had the opportunity of examining a considerable number of cases of this affection; the following account of the disease is founded upon the analysis of 25, the only ones which presented sufficiently enlarged details.

In reference to the anatomy of the intercostal nerves, we have to bear in mind, that each nerve gives off an *anterior perforating branch* near

the sternum, and a *middle perforating branch* at the middle of the intercostal space; and also that the *posterior branches* for the spinal muscles send some filaments through them, which ramify in the skin; these may be called the *posterior perforating branches.*

Our author regards this as a very common affection; he has met with it in subjects of an advanced age, and in one infant, but the interval between seventeen and forty years presents the greatest number of cases. The majority of patients were females. The left side of the chest is more frequently affected than the right, and the sixth, seventh, and eighth spaces seem peculiarly liable to the affection. The most interesting point ascertained by M. Valleix, is undoubtedly the existence of three points in the course of the nerves which are painful upon pressure. The first of these is situated a little to the outside of the spinous processes, almost opposite the exit of the nerve from the intervertebral foramen; this is the *posterior* or *vertebral point;* the second is at the middle of the intercostal space, the *lateral point;* while the third will be found between the cartilages, a little to the outside of the sternum, or in the epigastrium a little to the outside of the median line,—this is denominated the *anterior*, *sternal* or *epigastric point.* All these had a very circumscribed extent, and beyond them pressure could be firmly exerted without producing any particular discomfort to the patient. M. Valleix has never found the posterior point wanting; the anterior existed in 19 out of the 25 cases, and the lateral in 17. The exact position of the anterior is more variable than that of either of the others, and in some instances it was found to be multiple.

On the lancinating and dull constant pains it is not necessary to make any remarks: they are often increased by forcible inspirations, coughing, movements of the arms, &c. It is worthy of notice, that M. Valleix could never ascertain any relation between exacerbations of pain in the epigastric point, and derangement of the stomach; and that in only one case were the intermissions regularly periodic. M. Bassereau is of opinion that this affection is invariably connected with uterine disorders; our author's experience leads him to believe that there is little difference in this respect between it and other varieties of neuralgia, and that the most remarkable circumstance noticed by that observer, namely, the existence of a painful spot upon the cervix uteri, which will be more particularly considered immediately, was a symptom of a complication with another species of neuralgia, the *lumbo-abdominal.* By attending carefully to the circumstances noticed above, the diagnosis, which is often found so puzzling in painful affections of the thorax, will be greatly facilitated. The existence or absence of disease in the respiratory organs must of course be carefully ascertained by means of auscultation and percussion. The want of that peculiar anxiety and sense of impending dissolution, which is so characteristic of angina pectoris, distinguishes the affection we are now considering from that more important malady. It is more difficult to lay down rules for discriminating it from rheumatism of the thoracic parietes, but in general the seat of the pain in the latter affection will be found less circumscribed, and the three points not distinguishable. The suffering is also greatest when the muscles are called into action. For other differential symptoms we must refer to the original work itself. (pp. 408-11.)

In acute diseases of the spine there can be no difficulty in making the diagnosis. Chronic diseases are more liable to be mistaken, but even in these M. Valleix believes that it will be generally found that pressure is more painful immediately over the spinous processes than at the sides, while precisely the contrary obtains in this neuralgia. Our author is of opinion that the affection known in this country and in America by the name of *spinal irritation* is nothing more than neuralgia: on this point we shall not hazard an opinion, but shall merely quote the following observation as worthy of attention:

"The pain produced by pressure is situated at the exit of the nerve, on a level with the intervertebral foramen, and in no other position; now, if there had been really an irritation of the medulla, and if this irritation were the cause of the disease, in some cases, if not in all, the pain should be found at the origin of the nerve, and consequently in a point more or less elevated above the intervertebral foramen, in proportion as the neuralgia is seated lower down. But this will be seen not to be the case." (p. 345)

Intercostal neuralgia is, perhaps, the most important variety, in a practical point of view, hitherto noticed. It is extremely frequent in this country, and, according to our experience, almost confined to young women: it is constantly mistaken by practitioners for chronic inflammation of the thoracic and abdominal organs, especially of the pleura, lungs, liver, and spleen, to the great injury of the patients.

LUMBO-ABDOMINAL NEURALGIA. This variety of the disease is still less known than the preceding, the only form under which it has been studied, being that which is denominated *ileo-scrotal neuralgia.* In reference to the anatomy of the parts concerned, it is necessary that the reader should bear in mind, 1, that the posterior branches of the lumbar nerves become subcutaneous at the outside of the spinous processes; 2, that there are several pretty large cutaneous filaments which run downwards to the integuments of the hip, and intersect the crest of the ilium at right angles, in front of the common lumbar mass of muscles; 3, that the cutaneous filaments of the abdominal branches of the lumbar plexus terminate in the skin over the lower part of the rectus; 4, that the anterior cutaneous branch of the external inguinal nerve becomes superficial at its exit from the femoral arch; and 5, that the scrotal nerve terminates in the skin of the scrotum of the male, and of the labia majora in the female.

Like intercostal neuralgia, with which it often coexists, this affection is more commonly seated on the left than on the right side; but of thirteen cases, it was situated eight times on the left; the other five were double, and of these, in two the pain was most severe on the right, and in three on the left side. (p. 453.) The first pair of lumbar nerves are most involved in the disease. Sometimes the pain is limited to the posterior muscles, and at others the anterior also participate; the symptoms of course vary accordingly.

The following are the points which exhibit pain upon pressure: 1, a *lumbar point*, a little to the outside of the vertebræ; 2, an *iliac point*, a little above the middle of the crest of the ilium; 3, a *hypogastric point*, above the inguinal ring, and to the outside of the linea alba; 4, an *inguinal point*, towards the middle of Poupart's ligament; 5, a *scrotal point*, towards the lower part of the testis, in the labium. Of these the hypo-

gastric is the one most frequently wanting. A reference to the anatomical facts above noticed will explain the exact localities.

It is in this variety that the painful point upon the cervix uteri, which is so much insisted on by M. Bassereau, is most uniformly met with. We quote the following case, because the symptoms are well marked, and the non-existence of any complications relieves the diagnosis from all doubt:

CASE XLI. "A young laundress, aged 17, unmarried, stout, of ruddy complexion, with the pilous system slightly developed, presented herself at the Bureau Central, December 8, 1840. She has menstruated for a year. Six months ago the catamenia were suppressed for three months, and at the same time an abscess formed at the base of the jaw. Since then she has been perfectly regular. She lives in a warm, light, and dry room. Eight days ago, without any known cause, she perceived a pain, which commenced at the lower part of the abdomen, and afterwards extended to the loins. Pressure is painful over a space of four centimetres to the outside of the lumbar spinous processes, as far as the sacral region, on the right side; along the crest of the ilium to the extent of two centimetres; and in the hypogastrium over a space of about four centimetres. There is a similar pain, but to a much slighter extent, in the corresponding points of the left side. Pressure is not productive of any pain in the intervals between these points. The cervix uteri is firm and small, extremely painful to the touch on the right side, much less so on the left. No discharges, and no other pains. Little appetite; considerable thirst; bowels regular; no nausea nor vomiting. Pulse 92, soft and regular, with no abnormal character." (p. 450.)

In this case it will be observed, that the most painful side of the cervix uteri corresponded with that in which the other neuralgic symptoms were the most prominently exhibited; there were no evidences of organic disease or inflammatory action in any of the parts, and the natural inference is therefore that the whole depended upon the same cause, viz. a functional affection of the different nervous branches. In some of the other observations related by our author, the coexistence of leucorrhœa, blennorrhagia, &c. might throw some doubts upon the true nature of the case; but supported as they are by this, in which no such chances of fallacy can be detected, it appears scarcely possible that the diagnosis should be incorrect. We refer to the work for further information upon this remarkable point, and for the arguments by which M. Valleix combats the opinions of M. Bassereau, that the pain is the result of inflammation. (p. 403 et seq.) We do not conceive that there can be any difficulty in distinguishing between this affection and lumbago, gravel, &c. if the practitioner be sufficiently careful and minute in his enquiries. M. Valleix gives the differential marks, but we have not room to transcribe them.

CRURAL NEURALGIA. This is an extremely rare variety, excepting as a complication of sciatica. It was known to Cotugno, and is introduced into Chaussier's synopsis under the name *neuralgia fémoro-prétibiale.* Our author has met with two cases of the uncomplicated affection, and seventeen in which it was combined with sciatica. The crural nerve and its branches are the parts concerned. The following abstract of one of the two cases will give the best idea of this variety.

CASE XLVI. *Crural neuralgia of the right side.* "A young man, aged 23, a jeweller, presented himself at the Bureau Central, December 10, 1840. ....

Three weeks ago he was suddenly seized in the morning when rising, with a severe pain in the right groin, which gradually passed downwards to the dorsum of the foot. Lancinations were soon observed in the groin, and almost immediately afterwards in the foot, without affecting the rest of the limb; in other words, there were two consecutive lancinations, one in the groin and the other on the dorsum of the foot, but the pain passed over the interval between these two points, without manifesting itself in the course of the nervous filaments. These lancinations still exist, and are tolerably frequent. They sometimes pass to the nates, but never to the loins. When they are absent the patient is conscious of a sort of numbness, and a dull fixed pain in the parts above indicated. Pressure is painful in several circumscribed points, viz. in the groin, at the external and superior, the middle, and the internal and inferior aspects of the thigh, and above the knee. There are also two equally remarkable points, in part of the internal malleolus, and at the base of the first toes. The most extended of these is not more than four centimetres in diameter, and the intervals are perfectly insensible to pressure. The patient has severe pain when walking, chiefly when the foot is placed to the ground." (p. 471.)

This case presents all the points, painful on pressure, that our author has detected, excepting one, which is on the inner side of the sole of the foot. It is also an example of a phenomenon, which is by no means uncommon, though difficult enough to be explained, viz. the simultaneous appearance of pain at the two extremities of a nerve, the interval remaining perfectly free.

FEMORO-POPLITEAL NEURALGIA.—SCIATICA. In pursuance of an original design, we shall in a great measure confine ourselves to the notice of such points as have not been prominently brought forward by other observers: the affection itself is too well known, and has been too frequently described, to require, or even admit of any lengthened account.

For the compilation of this article, M. Valleix has analysed 125 cases; but of this large number 36 only were complete in all their details; 15 of these 36 are original, the remaining 21 are borrowed from M. Louis. In reference to the anatomy of the parts concerned, we would recall the following points to the reader's recollection: 1, the series of *posterior branches* of the several nerves ramifying in the skin over the posterior attachments of the gluteus maximus; 2, the exit of the *gluteal nerves* through the upper part of the sciatic notch; 3, the *ascending* branches of the superior gluteal, which run as far as the crest of the ilium; 4, the *crural branch* (*posterior middle cutaneous*) of the inferior gluteal, which furnishes a number of filaments to the skin along the biceps; 5, the course of the *external popliteal sciatic*, (*popliteal* and *posterior tibial*,) which approaches the skin in the popliteal spaces, and becomes still more superficial at the head of the fibula, round the neck of which bone it turns, and which gives off the *external malleolar nerve*, some *dorsal branches* and *collateral nerves of the toes*; 6, the *external saphenous nerve*, which becomes superficial at the middle and lower part of the calf, passes to the outside of the tendo achillis, then behind the internal malleolus, and gives origin to the external calcaneal nerves; 7, lastly, the *lower part of the tibial nerve* which descends along the inner side of the tendo achillis, passes behind the internal malleolus, and divides into two plantar branches. It should also be remembered that these branches frequently communicate with each other, for this has an important influence on the dissemination of the symptoms.

This form of neuralgia is one of the most common ; as we have already observed, M. Valleix conceives that in point of frequency it ranks next to the dorso-intercostal variety. It appears to be of rare occurrence in the earlier periods of life : the most remarkable case on record is perhaps the one related by Cotugno, in which the patient was only eleven years of age : males are more liable to the disease than females. There is little difference between the two sides of the body, in reference to the frequency of the attacks, but upon the whole the left has the preference. Out of 103 cases 46 were on the left, 43 on the right, and the remaining 14 were double. This view is confirmed by the observations of Romberg. In some instances M. Valleix thinks he has traced a decided connexion between the origin of the disease, and disturbance of the menstrual functions ; it is very probable that this opinion is correct, but the table upon which it is founded (p. 573) is quite insufficient to bear out the conclusion. He has never met with a case in which the disease could be denominated syphilitic. Professor Romberg enumerates syphilis among the list of causes, but does not mention how many cases he has seen ; indeed this remark applies to all his descriptions ; there is no attempt any where at numerical deductions. These two authors are also at variance in regard to the metastatic origin of this affection ; M. Valleix has never been able to trace it to such an occurrence ; the German writer mentions several kinds of metastasis which may produce it. (Loc. cit. p. 63.)

The following are the points, in one or more of which a constant fixed pain is generally felt, and which are also painful upon pressure : 1. *In the loins*, but rarely. 2. *In the region of the hip ; a*, near the *posterior superior spinous process of the ilium*, observed in all the cases but one, i. e., in 35 out of 36 ; *b*, about the middle of the crest of the ilium extending downwards a little upon the origin of the gluteus maximus, in 8 out of the 36 cases ; *e*, at the upper part of the ischiatic notch, in 16 cases (Romberg also notices the fixed pain in this point) ; *d*, near the posterior edge of the great trochanter in 26 out of the 36 cases. 3. *On the thigh ;* here it is much more rare to find isolated points, but in 4 cases M. Valleix detected three distinct parts in which there was pain on pressure, one near the tuberosity of the ischium, another in the middle of the thigh, and a third a little to the inside of the insertion of the biceps. 4. *At the knee ;* in 17 out of the 36 cases the whole knee was painful, but even in these the suffering was greatest at the outside of the popliteal space, and at the head of the fibula ; in 9 others these isolated points were alone affected. 5. *In the leg ;* there are three principal localities of pain in this region ; *a*, along the posterior edge of the fibula, observed in 28 out of the 36 cases ; *b*, in the calf, over the septum, between the two heads of the gastrocnemii, in 15 cases ; *c*, a little to the outside of the crest of the tibia in 5 cases. 6. *On the foot*, including the malleoli : this region was affected in 25 out of the 36 cases ; in 8 the whole foot was painful, but in 7 of these there was also a very distinct point behind the external malleolus. The internal malleolus was affected in 3 others ; and M. Valleix also detected painful points upon the toes. In 3 cases only was there any decided pain in the sole of the foot, and in these its precise locality could not be ascertained. We refer our readers to the slight anatomical sketch given above for an elucidation of the nature of these painful points.

Lancinations existed in all our author's cases, but not during the en-

tire course of the disease, and in 3 out of 21 cases observed by M. Louis they were not manifested at all. This is an interesting feature in the disease, well worth the notice of future enquirers. *Cramp* was observed in 7 out of the 36 cases, and *convulsions of the limb* only in *one*, an old standing and very severe case. To this fact we request particular attention. Many patients complained of partial shiverings, and the sensation as of cold water running along the nerve. Professor Romberg affirms, that sciatica is seldom complicated with other forms; but in 12 out of 15 cases carefully examined by M. Valleix, neuralgic pains of various kinds were observed in different parts of the body, and he observes that when the principal disease was limited to one side, the complications were found on the same side of the body, when it was double they were also double, or existed only on the side which was most violently affected (p. 535.) M. Valleix has only met with one case in which the limb became atrophied. The attacks of pain frequently come on at night, especially upon first lying down in bed, being probably caused by the impression of cold from the sheets, not as M. Valleix imagines, from the diminished temperature of the air. Both the German and the French author insist upon the rareness of intermittence in this form of neuralgia. In reference to the *anatomical lesions* observed in sciatica, we shall be silent, merely referring our readers to the original (pp. 556 et seq.) for the celebrated case of Cotugno, and our author's very judicious remarks upon it.

Diagnosis. With proper attention, in most instances, this cannot be very difficult, yet disease of the hip-joint has been mistaken for it; a case of this kind is related by our author (p. 591), and is deserving of a careful perusal. We would refer also to an interesting case in which sciatica coexisted with articular rheumatism, the two alternating in violence and prominence of symptoms (p. 585 et seq.)

TREATMENT OF NEURALGIA. We now proceed to the consideration of the treatment of neuralgia, a subject which, notwithstanding its great importance, will detain us but a short time, because, excepting on one or two points, our author differs little from the opinions of preceding writers. We shall begin with the *internal* administration of remedies; and here, at the outset we would remark, that throughout the entire course of the work before us, M. Valleix does not once refer to the *purgative plan.* It is impossible that he can be ignorant of it, and equally so that he should be unaware of the success which has undoubtedly attended it in many cases, though it has failed in producing all the benefit that was once confidently anticipated from its employment. How the omission is to be explained we know not, but it is assuredly one of no small magnitude. Several years ago Sir Charles Bell reported in the Medical Gazette his success in the treatment of *tic* on this plan, the principal purgative being croton oil. He has noticed the subject at greater length in a late publication,* and Dr. Newbigging has recently published a report on the same subject.† Dr. Allnatt, in the little work on Tic Douloureux noticed in our last Number, has adopted the same mode of treatment, and, according to his report, with very great success. In some of these cases the croton oil would seem to have had some other (specific) effect, besides its general action as a purgative.

* Practical Essays, Edinb. 1841. † Edinb. Journal, Jan. 1841.

M. Valleix has no faith in the internal use of *narcotics* as a means of cure, having never met with a case in which the disease was removed by their employment. As palliatives they are of course extremely valuable, for in a disorder so painful, the most temporary relief is a matter of no little moment. The experience of practitioners in this country is, however, more favorable to this class of remedies, numerous cases being on record which have been cured by the exhibition of various sedative remedies, especially the *belladonna*. Our author speaks very doubtfully regarding the efficacy of the *sesquioxide of iron;* he does not seem to have employed it himself, and objects to the cases related by other observers, that the treatment has generally been too complex to allow of any decided opinion being formed. Unquestionably this objection applies to the majority of published cases, yet several are on record in which the beneficial effect of the medicine could hardly be called in question. He takes a more favorable view of the celebrated pills of Meglin (composed of hyoscyamus and oxide of zinc, āā gr. j. in each pill,) and believes that in many cases when the plan has failed, this event is to be attributed to the smallness of the dose, and the want of perseverance in the administration of the medicine. M. Méglin sometimes gave as many as from 36 to 48 pills a day without producing any bad effects, a somewhat wholesale mode of treatment!

When the paroxysms are decidedly periodical, the practitioner will do well to make trial either of the *quinine* or *arsenic;* remarkable success has been obtained from both.

We have yet to mention one other internal remedy which has been employed with singular advantage in the treatment of the sciatic form of neuralgia, we mean the *oil of turpentine*. This means of cure has been most successful in the hands of M. Martinet, and though, like all others, it will often fail, it is certainly one that deserves particular attention. Professor Romberg speaks highly of it; he has not observed that feeling of warmth extending from the intestinal canal to the nerves, in successful cases, which is insisted on by M. Martinet. He prefers the form of electuary, composed in the following manner:

℞ Ol. Tereb., ʒj.
Syrup. Aurant. vel. Mellis, ℥ij.
M. A tablespoonful twice a day.

If the taste be disagreeable to the patient, the following formula, recommended by Martinet, may be adopted:

℞ Ol. Tereb., ʒj.
Magnes. Calcin., ℈iiss.
Ol. Menth. gtt. viii.
M. A bolus of the size of a hazel nut to be taken in a wafer *(pain à chanter)*, three times a day.

In reference to the employment of external remedies, our notice must be almost entirely confined to one plan of treatment, which in every case where it has been employed by our author has been productive of great alleviation in the symptoms, and which has often succeeded by itself in effecting a cure; we allude to the application of a succession of small blisters over the points in the course of the nerves which are *painful upon pressure*. Many of the instances recorded in the work before us, in which this remedy has rapidly removed the preexisting symptoms, are

of the most striking nature, and we earnestly recommend their attentive perusal. The plan is not altogether original; Cotugno employed one very similar; but the idea of singling out the particular localities where there is either the constant dull pain, or which are painful upon pressure, is, we believe, to be attributed to M. Valleix alone. He considers this method decidedly preferable to the use of irritating ointments to the denuded surface of the skin, which is often productive of intolerable pain, and has frequently appeared rather to aggravate the symptoms than conduce to a cure. The *endermic* employment of morphia may be attempted with advantage in some cases, but it is a painful remedy. Dr. Basedow has procured much relief from careful bandaging of the affected limb. (Romberg, l. c. p. 70.)

The *actual cautery* has been employed with success, particularly by M. Jobert, but we perfectly agree with our author that it should never be employed until other means, and especially blisters, have been tried and found of no avail. The same remark applies to *section* of the nerve, and the removal of part of its substance, both of which so frequently disappoint the expectation of the practitioner and the hopes of the unfortunate patient. M. Valleix has seldom employed *electricity*, and never with success.

In the preceding pages we have endeavoured to give our readers a tolerably complete analysis of M. Valleix's very interesting book, and we again heartily recommend a perusal of the original work. We do not feel ourselves authorized to regard his opinions as clearly established, but the amount of evidence which he has brought forwards in support of them is surely enough to demand attention on the part of other practitioners. If his views be correct, they afford us a method of investigation of the highest value, both as regards our diagnosis and prognosis of these protean maladies, and may possibly at some future period conduce to the formation of something like a satisfactory theory of their nature. The work would bear condensation, and would be considerably improved by the omission of many needless repetitions, especially the double descriptions of each form of neuralgia, of which we cannot perceive that the advantage does in any way compensate for the tedium.

We cannot bring this article to a conclusion without briefly noticing the opinions of Dr. M. Hall upon the subject of neuralgia, as developed in his recent work on the Diseases and Derangements of the Nervous System. Neuralgia is included by Dr. Hall in the list of *cerebral diseases*, under the head "Augmented action of the sentient nerves." (§ 1485.) *Spasmodic tic* finds its place among the diseases of the *reflex* or *motor nerves* of the *true spinal system*. (§ 415.) Are these then two separate diseases? We think not; and we do not apprehend that Dr. Hall regards them as such, though it is not very easy to understand his views. Assuredly the cases recorded by him as instances of *spasmodic tic* appear to be wanting in the most essential symptom of neuralgia, viz. pain, (vid. pp. 343-7); but under the same head he makes the following remark: "In one case, exposure to severe cold induced numbness of the face, which gradually passed into a terrible *tic douloureux*." (§ 1753.)

Again, in his description of neuralgia, after describing the nature of the paroxysms of *tic douloureux* as being "sudden, irregular in their occurrence, frequently more or less transient or momentary, induced, when in the face, by the act of eating, or talking, or by the contact of external bodies with the acutely sensitive extremities of the nerves," he observes, "This disease is distinguished by that which the term *tic* means originally: viz. by a sudden contraction of several muscles, with distortion of of the face. Its seat is various—in different parts of the face, of the limbs, and of other parts of the surface of the body." (§ 1500-1.)*

This last sentence may, perhaps, afford an explanation of the apparent difficulty. If Dr. Hall regards *spasm* as the characteristic symptom of the affection, we can understand why he should include under the same appellation cases in which pain did not exist, or at any rate was not prominent, (for we are surely at liberty to suppose that this was the state of matters in the instances above referred to, seeing that no reference whatever is made to it.) But is this view of the matter warranted by facts? Is it true that *spasm* is the chief characteristic of neuralgia? Dr. Rowland, in his excellent work on this disease, observes—"The addition of *spasmodica* [to the term neuralgia] is objectionable, because it refers either to an obscure theory of the disease, or to a symptom of *comparatively rare occurrence*, namely, the convulsive motion of the facial muscles during the paroxysms." (Rowland on Neuralgia, p. 98.) M. Valleix out of fourteen cases of facial neuralgia, carefully examined by himself, only met with *four* in which this symptom existed, and in these the spasms were so slight that there was no distortion of the face. (p. 93.) In all the recorded cases which he scrutinized he could only find sixteen in which they were observed. It will be remembered that the whole number of cases which he analysed amounted to fifty-five. In the other varieties the occurrence of this symptom is still less frequent; we doubt if it ever exists when the disease is confined to the trunk, and M. Valleix has only met with *one* case of violent involuntary contractions of the muscles out of thirty-six affected with sciatica. We should like to be informed upon how many observations Dr. Hall has founded his assertion, which is so greatly at variance with the experience of other investigators.

But while we thus differ from him upon this point, we have great pleasure in bearing our testimony to the value of his researches as affording an explanation of the method in which these spasms are occasionally produced, and would hazard the opinion, (which by the way is probably his own, though we do not find it expressed in so many words,) that their presence or absence depend upon the fact of the *incident* filaments being involved in the affection, or the disease being strictly confined to the mere *central sensitive fibres*. If this idea be correct, it will throw great light upon what might otherwise be regarded as a singular anomaly, and will not be without use in reference to the prognosis.

* We quote these passages in Dr. Hall's own words, in order to avoid as much as possible all risk of misapprehension.

Art. VIII.

Principles of General and Comparative Physiology. By W. B. Carpenter, M.D. Second Edition.—*London*, 1841. 8vo, pp. 577.

It affords us the utmost pleasure and satisfaction to find ourselves so early called upon to notice a second edition of this work. We principally rejoice in this because we most conscientiously believe that the extensive diffusion of the physiological views and doctrines which it contains will not only powerfully tend to the advancement of medical science, but will give a higher tone and more philosophical cast to the general doctrines of physiology. It appears that before the time of Hippocrates medicine formed a branch of philosophy, and Socrates, Plato, and their immediate disciples devoted considerable attention to the study of anatomy and physiology. The anatomico-physiological descriptions of Plato and Zenophon have been quoted by Longinus as specimens of the sublime. The work before us will, we have no doubt, by its clear, concise, yet comprehensive and logical exposition of the doctrines of physiology, largely contribute to restore that science to the place it formerly justly held in the estimation of those who devote themselves more exclusively to the moral and physical sciences. If these subjects, in the crude and imperfect condition in which they existed among the ancients, were thought worthy of the careful attention of the sages of ancient Greece, how much more deserving are they, in their present improved state, of the attention of those superior minds, whose mental energies disdain to be bounded within the narrow circle of one science, and who delight in extensive and connected views of nature's works? The general doctrines of physiology are eminently fitted to improve and discipline the mind; and there are not to be found in the whole circle of the sciences subjects more deserving of the consideration of the rational and intelligent mind of man than those embraced by the laws which regulate the organic development of animals and vegetables. We hope the time is fast approaching when lectures on comparative anatomy and physiology will form a part of every well-regulated system of general education. As some of the most important doctrines in the favorite science of geology are now founded upon the structure and physiological conditions of the remains of those animals and vegetables found imbedded in various parts of the strata forming the external crust of the earth, those who may wish to make any satisfactory advances in a knowledge of that science would find their progress much facilitated by a careful perusal of the contents of this volume. It was intended by the author that his work should be equally adapted for the general and the professional student, and in this he has admirably succeeded.

The grounds upon which we maintain the great excellency of this work, and so earnestly recommend it to our professional brethren, may be shortly stated.

1. We are convinced that philosophical physiology must be founded upon an examination of the vital actions of all organized bodies, vegetables as well as animals, and that it is equally absurd to attempt to ascertain physiological laws from a consideration of one class only of

organized bodies, as it would be to lay down the characters of a particular nation or tribe of men from an examination of one only of the numerous individuals of which it is composed. This doctrine is not only inculcated, but fully followed out by our author.

2. We believe that it contains just and correct views regarding the *nature and cause of vital action*. The proper signification of the term *life* is the assemblage of the characteristic phenomena manifested by an organized structure, and by the term *vitality* is meant the quality or property of organized bodies of exhibiting certain phenomena, the sum of which constitutes *life*. The expression *vital actions* may in the same manner be used simply to express those phenomena which occur in organized living bodies, which cannot at present be referred to chemical or physical laws, and without the slightest reference to any theoretical notions as to the cause of these actions. The chief objection to the doctrine of a vital principle is not that we can prove it to be false, not that it cannot possibly be true, but that it is highly unphilosophical to assume the existence of an agent of which there is not the slightest proof, the subject being in fact of such a nature as not to admit of any satisfactory evidence. We believe as thoroughly as any vitalist can do, that many of the phenomena of living bodies cannot and never will be explained by chemical and physical laws; we strongly and earnestly disclaim the slightest participation or wish to convert the human body into a chemical or mechanical apparatus; we boldly proclaim the divine origin of all organized bodies; but we do deny, on all the principles of induction and reasoning, that any one is entitled to assert that the phenomena peculiar to living bodies are the result of any single or of any particular set of agents or entities, whether material or immaterial.

When we examine the objects of the inorganic kingdom, we find that they exhibit certain physical properties which we term hardness, extension, &c., that they manifest certain actions called attraction, chemical affinities, &c. On the other hand, when we investigate organized bodies, we perceive that besides exhibiting various actions similar to those which we witnessed in the inorganic world, they also manifest certain actions peculiar to themselves, to which we give the name of nutrition, muscular contraction, &c., so that, proceeding on philosophical principles, we divide all the objects on the earth's surface into two great groups, into those which are organized and into those which are unorganized, these being distinguished from each other by wide and important differences in their structures and qualities. It is only on account of these differences in their qualities that we are entitled to separate physiology from natural philosophy; for if the manifestations of activity in an organized body, which we are at present obliged to refer to *muscular contractility*, &c., had any bonds of affinity with those which we witness in inorganic matter, physiology would then form a part of natural philosophy. All our knowledge of the inorganic kingdom consists in an acquaintance with the qualities and actions which it embraces, and all our knowledge of organized bodies is also derived from a similar examination of their qualities and actions, and it would just be as reasonable and equally logical to refer all the actions exhibited by inorganic matter to some presiding *anima mundi*, as it is to call in the agency of a vital principle to account

for the manifestation of activity in organized structures. The greatest length to which our finite faculties can carry us in the investigation of either organized or unorganized bodies, is to trace up effects, if possible, to what are called their causes, and to refer them as far as we are able to some of the great properties with which the Creator has endowed matter; for in every science we arrive at certain great facts beyond which we have but little prospect of passing, such as *attraction* in the physical sciences, and *muscular contractility* in physiology; and it is impossible to conceive how the religious faith of that man who believes that life depends upon certain properties impressed upon matter by the hands of its Creator,—properties cognizable by their effects on the senses, and whose existence is capable of demonstration,—can be weaker than his who asserts that life depends upon some unknown entity conjured up by his own imagination. Some of the vitalists (as our author has himself experienced) have not hesitated in their zeal for their favorite doctrine, to raise the cry of materialist and atheist against all who refuse to adopt their dogmas. It may appear to some that the differences between the vitalists and those who entertain opinions similar to our author, are but trifling after all, and not worth the disputing about; for while the vitalist refers the phenomena peculiar to organized bodies to an imaginary entity, their opponents refer them to certain properties of organized bodies which they designate by the term *vital properties;* but upon reflection it will be found, that the assumption of an imaginary *vital principle* is not only totally uncalled for, but that the recognition of such supposed entities has exercised a most baneful influence upon the progress of science. It has done this, not only by leading the mind into discussions upon things which can never be proved to exist, and of whose nature—even admitting that they do exist—we can know nothing, but also by perpetuating that vagueness and indistinctness which must necessarily float around our notions of the agency of an unknown immaterial principle. Accordingly it was not until natural philosophers had discarded all such entities from their discussions, and applied themselves to the observation and the classification of phenomena, that such brilliant discoveries rewarded their labours.

3. We believe that our author entertains very correct notions upon the agency of the capillary blood-vessels, in the performance of the functions of circulation, nutrition, and secretion. It must be known to all our readers that since the time of Cullen, many most important phenomena, both in the healthy and morbid conditions of the body, have been attributed to the actions of the coats of the capillary blood-vessels. The regulation of the supply of blood in particular organs and tissues, the functions of nutrition and secretion, the phenomena of inflammation, &c. have been, and by many still are, chiefly or entirely referred to the contractions and relaxations of the capillary blood-vessels. In these opinions are contained many grave and serious errors, which must be entirely discarded before any very important advances can be made, either in physiology or in pathology. Such errors could never have arisen if physiologists had not formerly restricted their investigations almost entirely to the vital actions of man and the higher organized animals. A stronger argument could not be produced in favour of the plan of studying physiology adopted in the work before us, than the important light which it

throws upon these subjects. There can be no doubt that the functions of nutrition and secretion may take place without the agency of vessels, and that when present they merely answer the purpose of *carriers*, for the more abundant and ready transmission of the nutritious fluids. In the same way the regulation of the supply of blood in particular organs and tissues depends not upon the contractions of the coats of the capillaries, but upon certain actions and reactions which go on between the blood and the surrounding tissues. The phenomena of inflammation and the formation of morbid products and growths do not depend upon the capillaries, and we are fully satisfied that those who seek for their explanation in a particular arrangement of the capillary vessels are entirely in a wrong track. We do not doubt that minute injections of morbid growths may disclose some interesting facts, and may form one of the elements by which we may ultimately be enabled to arrive at a knowledge of the general laws regulating their production; but to continue to attach the importance to this mode of investigation which some pathologists still do, argues a want of accurate information on the subject.

4. We believe that our author is also perfectly correct in maintaining that nutrition, secretion, and muscular contractility, are properties inherent in organized tissues, and are not derived from the nervous system, although they may be influenced by causes acting through it. Those who examine the manifestations of activity in all organized bodies can have little difficulty in arriving at this conclusion.

In a former Number (Vol. VII. p. 168,) we gave an analysis of some of the most important chapters of the first edition of this work, and expressed our highest admiration both of the extent and accuracy of the information which it contained, and the perspicuity and conciseness of the style in which it was written. We need not again point out the general scope and character of the work, and shall therefore confine our attention to the additions and improvements which are contained in this edition. From the free and rapid communication which now exists between the different nations of Europe, and from the numerous and talented investigators everywhere at work, facts and observations are accumulating in medical science, as in every other science, with a celerity hitherto unknown in the history of the world; and our author has consequently had to *modify* certain passages of the former edition, and to incorporate some new and important matter with the old. The most valuable additions will be found in the chapters on "the primary tissues of organized bodies;" on "the special and comparative physiology of nutrition;" and on "the reproduction of organized beings." In the former edition the author, when treating of the elementary tissues of vegetables, arranged them into three groups: 1, Cellular tissue; 2, Woody or fibrous tissue; 3, Vascular tissue. In this edition to these he adds a fourth kind, the Laticiferous tissue. This "consists of a series of branched tubes, anastomosing with each other, so as to form a network, in which the latex or elaborated sap flows. It is in this branching character that it chiefly differs from other forms of tissue, which never exhibit anything approaching to it." As the author remarks, "the resemblance of this system of vegetable vessels to the capillary vessels in animals is very striking." In entering upon the examination of the primary tissues of animals, our

author is enabled by late microscopic researches, for which we are chiefly indebted to the German physiologists, to show that "certain animal tissues permanently retain the cellular form, and thus constitute a close *approximation* to the parenchyma of plants. Among these we have not only fat, but also the *chorda dorsalis*, or gelatinous column which replaces the bodies of the vertebræ in some of the lowest fishes, and which occupies for a time the same position in the embryos of all higher vertebrata; the epidermic tissue and its appendages, such as the hoofs, nails, claws, scales, the medulla of the stem of feathers, &c.; and to a greater or less extent, in some kinds of cartilage." He fails not also to notice that "it is now satisfactorily ascertained that the substance of the tooth is formed, like that of bone, by the deposition of calcareous matter in cells and tubes, which originally present the ordinary characters of cellular parenchyma; but it does not, like bone, pass through the intermediate stage of cartilage."

In describing those portions of the muscular tissue in which the fibres present the transverse striæ or beaded appearance, and those in which the fibres present neither the longitudinal nor the transverse striæ, and are more flattened and smaller, Dr. Carpenter might have more clearly pointed out their functional differences. He speaks of the former structure as belonging to the voluntary, and the latter to the organic muscles. Now it could readily be shown that this structural difference does not depend upon the circumstance of the muscle being called into contraction by the influence of volition, or in some other way; but upon the mode in which the contraction manifests itself; or, to use more correct language, this structural difference in the muscular fibre causes a difference in its contractile properties, altogether unconnected with the circumstance of its forming part of an organ of voluntary or of involuntary motion. These muscles, which can contract and relax rapidly, possess the former structure; those which contract and relax slowly and in a vermicular manner, present the latter structure. As the first kind of contraction could be alone useful in an organ of voluntary motion, all the muscles placed under the influence of volition possess the former structure; but as there are certain rapid muscular movements required in the involuntary or organic functions of the body, such as the contractions of the heart, and those of the pharynx in deglutition, all the muscles of organic life do not present the latter structure. The muscular fibres of the pharynx present the striated or beaded appearance, and those of the heart also possess these striæ, though somewhat indistinctly. It is more probable that the slight structural differences between the muscular fibres of the heart and those of a voluntary muscle are connected with the differences of the mode in which their contractile properties manifest themselves, than with the circumstance that the one acts involuntarily and the other voluntarily. If we could agree in designating that kind of contractility which manifests itself by rapid contractions and rapid relaxations, *muscular contractility*, as occurring in the most characteristic parts of the muscular tissue; and that which manifests itself by slow contractions and slow relaxations, as the stomach and intestines, *simple contractility;* we could then state that the muscles which have the property of *muscular contractility* present the striated appearance,

while those which have the property of *simple contractility*, show no longitudinal nor transverse striæ, and are smaller and more flattened. Whether this phraseology be adopted or not, it is obvious that the terms voluntary and organic muscles used with a reference to these structural differences, may lead to error. In speaking of the *nervous tissue*, our author adopts the opinion of Remak and others, that there are small gray filaments in the sympathetic system which have been termed *organic*. We formerly stated our belief in the existence of these organic filaments, but as the question may still be considered as sub judice, we shall not at present enter upon it. In the section on the "transformation of tissues," among other highly interesting remarks, the author directs our attention to the fact, that morbid growths not unfrequently present themselves, which may be resolved into elements resembling those of the proper structures of the body; "and that the peculiar character of *malignity* which the surgeon assigns to these growths should be founded on their rapid increase, their destruction of the tissues amongst which they are developed, and their tendency to make their appearance in other parts of the body, even after the removal of the original diseased growth, rather than on any essential peculiarity in their ultimate organization, or in their chemical composition. The presence of cells or vesicles, containing nuclei, the walls of which cells are easily separable from one another, is an almost constant characteristic of these growths, and thus we may regard them as not having advanced far in the process of organization. These cells frequently become elongated, so as to present the *spindle* form (like that of the woody tubes), and when such cells are regularly arranged in clusters the tissue will possess more or less of a fibrous character. In no instance has the complete transformation of the cell itself into a bundle of fibres been observed; so that the whole tissue may be regarded as developed upon the low and simple type of the vesicular tissue of the lower plants and animals." As this last observation is meant by the author to apply only to morbid growths, we admit that it is, as far as we are aware, perfectly correct; but there can be no doubt that some of the non-malignant growths, though cellular at first, afterwards assume a distinctly fibrous appearance, and it is in all probability on this circumstance that their non-malignancy depends.

In the chapter on the "nutrition and formation of tissues," our author has given a clear and concise account of the very interesting and important researches of Schleiden, Schwann, and their followers on these subjects, and has pointed out certain modifications which, in his opinion, require to be made in Schleiden's account of the formation of the primitive cells of vegetable tissue, and that of Schwann of the formation of the primitive cells of the animal tissue, in consequence of the results of more recent researches. Our space will not permit us to enter upon this question, and we shall content ourselves by indicating it to our readers.

The progressive development of the various tissues of all organized bodies apparently from a simple glutinous fluid in which cells present themselves, capable of generating new cells, and in other cases also of undergoing various transformations by which they assume the fibrous, tubular, and lamellar structures, characteristic of certain tissues when fully formed, is a subject of extreme interest, and when fully cleared up

may lead to most important consequences. Until we have ascertained the laws which regulate those molecular movements by which nutrition and secretion are effected, we can never hope to ascertain the nature and origin of those numerous structural changes in the textures of the body which pass under the various names of tubercles, tumours, &c., and which evidently depend upon some alteration of these natural molecular movements by which the materials are deposited in the different tissues of the body for their nutrition, or eliminated from the common mass of the blood by the various secretory organs. If once these laws could be ascertained,—and if this is ever to be done, it is not by making minute vascular injections alone, but by following in the track which the researches of Schleiden and Schwann have opened up to us,—then we might hope to be able to devise some more effectual method of controlling those diseased actions, by which morbid growths and depositions might be arrested; and many of those mutilations of the body by the knife of the surgeon—those opprobria of surgery, as John Hunter used to call them—which at present are absolutely necessary, may be prevented. When facts and observations shall have accumulated on these subjects, we indulge in the fond hope that in the process of time some future Harvey will arise who, by his successful generalization, will give another mighty impulse to the healing art, such as was given to it by the discovery of the circulation of the blood.

We are glad to find that our author has much extended his chapter on the "Reproduction of organized beings," and made it proportionate to the rest of the work. In the execution of this change he has amply succeeded in showing that "the philosophical pursuit of such an enquiry may be perfectly consistent with the purest delicacy of feeling, so that the general as well as the professional reader may enter upon it without reserve." No department of physiology has received so many additions within the last few years as that connected with the reproduction and development of organized bodies. It has now assumed a more definite and philosophical character, forming a marked contrast to the vague and hypothetical assumptions of which it was until lately composed. Our author has as usual collected from all quarters the numerous and scattered facts bearing upon this subject, and presented them in a faithful and lucid manner to his reader. From the extended comparisons into which he has been led between the processes of reproduction as performed by different classes of organized beings, he has arrived at a very interesting and original series of analogies, which will greatly simplify our knowledge on these questions, and much facilitate its acquisition. In detailing his views he first takes as his basis two facts lately ascertained. 1. "All organized tissues take their origin in cells, and the ordinary mode of increase of cells (whether animal or vegetable) is by the development of new cells within them, from the granular germs which they contain." 2. It has been observed in the germinal vesicle of animals that where new cells are developed from one spot, "the granules composing its periphery are first evolved so as to form a ring of minute vesicles; this ring is afterwards pushed out by a later-formed ring developed from a circle of granules nearer the centre, and this in its turn by another ring. The cells first generated subsequently dissolve away again, their space being occupied

by those formed at a later period, which in their turn give place to others; and those last evolved, which originate in the *centre* of the nucleus are the only permanent ones." He then proceeds to show that in the lowest *cryptogamia*, reproduction differs but little from the ordinary mode of multiplication by cells; while in the higher form of this division, "the first nisus is towards the development of a foliaceous expansion, the whole of which remains as the *permanent frond* constituting the perfect plant." In the highest *cryptogamia*, as the ferns, the structure developed from the peripheral cells is merely *temporary*, and the *permanent* portions of the plant originate from some of the interior granules. In the phanerogamic plants the *permanent structures* are only evolved from the central granules, "the peripheral portion soon disappears." In animals "the earliest *nisus* of the development of the germs is the extension of the periphery of the mass of cells first produced, into a membrane which incloses the yelk. An additional layer is subsequently formed internally to this, proceeding from a part of the germinal mass nearer to its centre. The sac thus formed is the simplest condition of a *stomach*, the most characteristic structural distinction between plants and animals. In the radiata the whole of the first-formed structure is *permanent;* the exterior layer constituting the permanent envelope of the body, and the interior the lining of the stomach." In the articulata and mollusca, the parts developed from the peripheral cells still continue a permanent portion, but the organs of *animal* life originate from the central cells of the germinal mass. In the vertebrata the whole of the first-formed structure is *completely transitory* in its character, like the cotyledons of plants. "All the organs of *animal life* which in this group attain so high a development, are developed from the *central* part only of the *nucleus* of the *central* cell of the germinal mass. This is the latest portion of the whole to undergo evolution; but to its development, the evolution of all the rest is subservient." The generalization deduced by the author from the various facts collected on this subject we shall give in his own words:

"Thus when we ascend the scale of being, in either of the two organized kingdoms, we observe the principle of specialization remarkably illustrated, in the development of the germ into the perfect structure. In the lowest of each kind the first-formed membranous expansion has the same character throughout, and the whole enters into the fully-developed structure. In higher grades, the whole remains, but the organs evolved from the centre have evidently the most elevated character. In the highest none but the most central portion is persistent; the remainder forms organs of a temporary and subservient nature." (p. xi.)

We perceive that Dr. Carpenter believes that *acquired peculiarities* under certain limitations may reappear or descend to offspring; and at the end of the fourteenth chapter we find him stating that "no one who has sufficient opportunity of observation, can doubt that the intellectual faculties, which have been developed by cultivation, are generally transmitted to the offspring in an improved state; so that the descendants of a line of educated ancestors will probably have a much higher capacity for instruction than the child that springs from an illiterate race." This doctrine, which many recent observations, particularly those of Mr. Knight, strongly corroborate, is one to which a benevolent and liberal mind naturally leans: we both hope and believe in its soundness.

In leaving this work we again express our unqualified praise of the

manner in which the various subjects which it contains have been treated by the author. We know of no work on the subjects of which it treats, which approaches it either in extent and variety of information, or in clearness and precision of thought. We conclude with the following extract from the preface, which we believe truly to represent at once the character of the work and of the author's mind:

"The author has only to add that, in a work comprehending so large a mass of details, many of which he has not had the opportunity of verifying for himself, it can scarcely be expected that no errors should exist. He has endeavoured in every instance to select, amongst conflicting statements, that which seemed most conformable to known principles, and was supported by the authority which was to his own mind most satisfactory. He will always, however, be open to correction, and will gladly avail himself of any that may be offered him. *Truth* is his only object; and, even if his own doctrines should be overthrown by more extended researches, he will rejoice in their demolition as he would in that of any other error. The character of the true philosopher as described by Schiller, one who has *always loved truth better than his system*, will ever, he trusts, be the goal of his intellectual ambition." (p. xii.)

Art. IX.

The Cyclopædia of Practical Surgery; including an etymological and critical terminology; detailed descriptions of instruments and apparatus; a copious bibliography; and an historical view of the progress of the science to the present day: the whole presenting a complete digest, alphabetically distributed, of the doctrines and practice of Surgery. Conducted by W. B. Costello, assisted by numerous distinguished writers in the various departments of Medical and Surgical Science. Illustrated with numerous engravings and woodcuts. Vol. I. ABA—DYS.—*London*, 1841. Roy. 8vo, pp. 879.

The first volume of this work was completed by the publication of the eighth Part in May last. The second volume is now in progress, and, we have reason to believe, will proceed with greater speed and regularity than its predecessor. As on former occasions we have noticed the general plan of this publication, we shall proceed, at once, to give some account of the more important articles contained in the first volume now before us.

The articles in the present volume which treat of the joints and their diseases, are by Mr. Blackburn, Mr. T. S. Wells, and Dr. Little. Those on anchylosis, traumatic arthritis, and articulations, are from the pen of the first of these gentlemen, who has evidently paid much attention to diseases of the joints, and has furnished three able practical papers. Chrondritis is by Mr. Wells, and is a useful paper, affording a summary of our knowledge on a subject respecting which we are still much in want of further information. Dr. Little has contributed a supplement to the article anchylosis, in which he narrates many cases in illustration of the advantages resulting from a division of the tendons in external anchylosis. Several of the cases are instructive, but they might, we think, have been much condensed with advantage. We shall proceed to give a few extracts from some of the above papers, treating as they do of a portion of surgery which so eminently owes its advancement to the labours of English surgeons, and especially of him who now so worthily occupies the first place among them.

Articulations. Under this head Mr. Blackburn briefly notices the various diseases to which the joints, and especially the more complicated joints, are liable. These he divides into such as arise from *external causes*, as wounds, sprains, and luxations, and such as are due to *internal causes*. He notices in succession the several tissues which enter into the composition of joints, and alludes shortly to the diseases which affect these. In speaking of scrofulous affection of the *bone*, and of the manner in which the cartilage becomes separated in this disease, he says:

"The appearance of the remaining cartilage in this state of things is so peculiar, that it may be almost regarded as diagnostic of the disease. The removal of the cartilage commences on its attached surface, and it is not uncommon to see a flake of cartilage supported by its continuity with other portions of cartilage overhanging the diseased and excavated bone. On taking hold of this tissue it may be easily detached in flakes of considerable size from the bone beneath, which is dark, ulcerated, and denuded. In the cases of ordinary inflammation, such as are cited by Key, Mayo, and Gerdy, either granulations, by which the removal of the cartilage is supposed to be effected, are thrown out from the osseous surface, or the cellular membrane interposed between the cartilage and the bone, invisible in the healthy state, becomes highly developed and vascular; but in scrofulous cases the bone seems altogether incapable of this action, and presents, as already mentioned, a dark and denuded surface." (p. 407.)

The author notices the opinion of Mr. Key, that ulceration of the ligamentum teres is a frequent cause of disease in the hip-joint. He admits, as an unquestionable fact, that ulceration of the ligamentous tissue may take place as a primary lesion, but inclines to the opinion that, in the majority of cases, the ligament is detached by caries of the bones, rather than by a primary affection of the ligament itself. In treating of the synovial membrane, Mr. Blackburn discusses at some length the question, whether this membrane forms a shut sac, and thus lines the cartilages, or whether, as Cruveilhier, Velpeau, and others maintain, it terminates at the edges of the cartilages: he concludes in favour of the former opinion. He also maintains the doctrine of the vitality of the cartilages, as evinced both by their physiological and pathological appearances, in opposition to the opinion held by the above anatomists, that they are to be considered as mere epidermic crusts. The arguments on both these questions are stated with ability and fairness, but will scarcely admit of condensation.

Anchylosis. In treating of this affection Mr. Blackburn has adopted a division into external anchylosis, the result of lesions of tissues surrounding the joint; and internal, dependent on lesion of the tissues proper to the joint; a very preferable division to that usually adopted, into true and false anchylosis, depending on the bond of union being by bone or by ligamentous or other soft tissues. *External* anchylosis may originate from a variety of causes, as long-continued want of motion, diseases of cellular membrane, lesions of the muscles and tendons by paralysis, or otherwise. *Internal* anchylosis may be due to *rigidity of the ligaments.*

"Inflammation may be set up in ligamentous tissue by a sprain, a luxation, or a fracture bordering on the articulation, by gout and rheumatism. This inflammation gives rise, at first, to a swollen and softened state of the ligaments, produced by deposition of lymph between the fibres; subsequently the whole tissue becomes rigid and indurated. When in this state it has very much the character of cartilage or fibrocartilage, and no longer permits the bones to move on one another with ease and freedom....Ossification of the ligaments is assigned

by some writers as a frequent cause of anchylosis, but it is certainly much rarer than is commonly supposed. The most common transformation of true ligamentous tissue is into cartilage. Internal anchylosis is sometimes produced by the formation of adhesions between the opposed surfaces of the synovial membranes. It is certain that the inflammation of this tissue does not ordinarily give rise to the effusion of plastic matter; but that it may do so occasionally is a well-established fact. The anchylosis thus formed may be firm and unyielding, but the medium of union between the articular extremities is only cellular membrane more or less condensed, while the anchylosis which ensues after the ulceration of cartilage or bone is usually effected either by bone or by ligamentous tissue." (p. 308.)

In speaking of the latter form of anchylosis succeeding to the ulceration of cartilage, Mr. Blackburn observes that

"Mr. Mayo speaks of anchylosis being produced by an effusion of false membrane from the substance of the cartilage, after an ulceration which had affected only its surface. This is an appearance I have never seen, nor do I believe it to be of common occurrence. I am well satisfied that in nine tenths of the cases of anchylosis following ulceration of the cartilage, the bands of adhesion by which the anchylosis is effected have been effused from the surface of the denuded bone."

Mr. Blackburn thinks osseous anchylosis much less common than is generally supposed:

"Crowther, whose experience was very considerable, says, 'I have seen but two cases of the knee and one of the elbow anchylosed by ossific union;' and so far as my own observation extends the inference to be drawn from his testimony is confirmed. The fallacy has probably arisen partly from the inspection of pathological museums, for which the specimens of osseous anchylosis are treasured up, while those of ligamentous union are thrown away, and partly from a common though erroneous belief, that soft anchylosis always admits of some degree of motion."

The author has made several judicious observations on the prevention and treatment of anchylosis, but we do not observe any point requiring particular notice. He concludes by relating the remarkable case of anchylosis of the hip-joint, which was remedied by Dr. Barton of Philadelphia, by sawing through the neck of the bone, and allowing an artificial joint to form;* and offers the following comments upon it:

"Before we give our decided approbation to this operation, the important question has to be considered, does it endanger the patient's life? If we look again to the somewhat analogous though more severe operation of excision, we find that it has been almost invariably successful when performed in the elbow-joint, generally on the shoulder-joint, never on the hip, where indeed it has been but once attempted, and rarely on the knee. There are many reasons which the reader will call to mind, why an operation such as that proposed by Dr. Barton should be more successful than that of excision; but I cannot bring myself to believe that even the former can be performed on the lower extremities without considerable danger. The large size and depth of the wound must oftentimes give rise to severe irritative fever or exhausting suppuration. These are risks which the evils of anchylosis do not warrant us in incurring; at least, I should find it difficult to wash from my hands the blood of any patient of mine who died in consequence of an operation for the relief of anchylosed hip or knee."

We observe that Sanson gives a similar though less strongly expressed

* Br. and For. Med. Rev., July, 1838.

opinion against the operation,* nevertheless, the question is one that cannot be decided by authority; and we are not quite sure that these gentlemen in coming to the above conclusion have not leaned too much on the supposed analogy between Dr. Barton's operation and that of excision of the heads of the bones in the lower extremities, which is certainly a much more severe and complicated operation. We may observe in support of our view that the operation has been twice repeated in America with success.†

Chrondritis. The article on the inflammation of cartilage (chrondritis,) we have already stated to be by Mr. Wells; it is an excellent memoir. After giving an account of the usual symptoms of ulceration of the cartilages, and remarking on the familiar fact, that in disease of the hip-joint the pain is often felt chiefly at the knee, Mr. Wells observes:

"In the other joints the pain is usually referred to the actual seat of disease, but in addition to this, a tormenting sensation of pain and numbness is felt along the shaft of the humerus when the shoulder-joint is the seat of ulceration In the case of a lady I was lately in the habit of seeing, this symptom had completely led her physician from the seat of the disease; he considered it pathognomonic of angina pectoris. In case of disease of the elbow-joint also, pain and numbness are sometimes felt in the wrist and back of the hand."

Great differences exist in different cases both as regards the rapidity with which the local disease makes progress, and the extent to which the constitution suffers. The author witnessed a case "in which there was surprisingly little disturbance of the functions, though, as was proved by examination of the amputated limb, effusion of pus and lymph had taken place into the joint. There was caries of the ends of the bones, external œdema and suppuration; and permanent flexion of the limb with consecutive luxations." Such cases are however rare, as, usually, hectic and wasting diarrhœa attend such local disorganization. In describing the class of cases which occasionally supervene during the progress of erysipelas, phlebitis, and the puerperal state, in which rapid absorption of the articular cartilages takes place with acute inflammation of the synovial membrane, the author mentions having met with the following case:

"I had lately the opportunity of examining the body of a female who died about a fortnight after delivery with symptoms which were ascribed to puerperal peritonitis. There were, however, no traces of abdominal disease. While examining the organs of the pelvis, our attention was directed to the left sacro-iliac synchondrosis, by an appearance of bulging in that situation. We found that the cartilages covering the opposed surfaces of the ilium and sacrum had been completely absorbed, and the bones were consequently denuded. There was a large quantity of pus contained between and around the bones, and their abraded surface was covered with an exudation of recent lymph."

Appearances of this kind are far from uncommon in puerperal cases, as may be seen from our article on puerperal diseases in the present Number.

In the treatment of ulceration of the cartilages, "the first object is to keep the affected joint in a state of the most absolute quietude;" for this purpose a calico bandage, stiffened with starch, albumen, or resin, will

* Dict. de Méd. et Chir. pratiques. Article, Ankylose.

† See Lancet for April 18, 1840, and Br. and For. Med. Rev. for July, 1840.

perhaps be found the best fitted. Local bloodletting is proper where the constitutional powers have not been impaired. In children blisters kept open, but in adults caustics are by far the most effectual means. The moxa which Mr. Wells recommends is made with paper which has been steeped in the liquor plumbi diacetatis, and afterwards dried. This is folded into a narrow strip and rolled up after the manner of a bandage, until it gives a surface about the size of a sixpence; Mr. Wells is against opening the joint where matter has formed, as more likely to lead to dangerous consequences than the leaving it to nature.

Amputation. This article is a very long one, and is the joint production of the editor, and of Dr. King, whose former post of house-surgeon to the Hôtel Dieu must have given him abundant opportunities for observation in this department of surgery, as conducted by some of the ablest of the French surgeons. After a brief historical notice of amputation, the author of this portion of the article, Dr. King we presume, proceeds to notice the various injuries and diseases which may render amputation necessary. In speaking of compound fracture as one of these, he observes that some surgeons contend that amputation is hardly ever necessary in compound fractures, others that it is frequently called for.

"Velpeau has recorded some bad cases of compound fracture cured without amputation. Sir A. Cooper's practice abounds with them; indeed, it is to him that we are chiefly indebted for the treatment by which such favorable results have of late been obtained in this department of surgery. Dupuytren's hospital practice was far less favorable in these cases, which I attribute to the frequency with which he was accustomed to renew the dressing, and thereby disturb the limb. It contrasted strongly with that of Sanson who adopted Sir A. Cooper's plan of treatment with much success."

Under the heads of Prognosis, Time for amputating, Place at which amputation is to be performed, and Preparation of the patient, are contained many judicious observations, from which we should willingly make quotations did our space admit of it. In speaking of the apparatus required for amputation, the author gives the following caution, which is well worth attending to; namely, that in order to avoid any serious omissions, the operators should, before the operation, take up each instrument in succession in the order in which it is required. Dupuytren, he observes, never neglected these precautions.

The author strongly advocates the employment of the fingers for compressing the artery, in preference to the use of a tourniquet, whenever a trustworthy assistant is at hand to whom the duty can be committed, and the limb is in such a state as to admit of its adoption.

"Those who have never seen it tried," he observes, "will be agreeably surprised to find with what ease and certainty the passage of the blood may be completely stopped in a large artery by the fingers properly applied, provided the vessel rest upon something solid, as the femoral artery does on the os pubis, and the brachial artery on the upper third of the humerus."

In describing the various modes of performing the circular amputation adopted at different periods, the author very properly insists on the advantages resulting, in the modern mode of performing the operation, from division of the integuments, of the superficial muscles, and of the deep layer, by successive incisions, and urges the necessity of preserving an ample supply of integuments to cover the face of the stump. The fol-

lowing account of Dupuytren's operations exhibits the evils arising from want of attention to this point, and may serve as a useful caution against sacrificing to mere rapidity of execution advantages of higher importance:

"Dupuytren, by a strange and inexplicable fatality, operated like Louis in dividing skin and muscles together. He differed from him in making more incisions of the latter, and in having the skin drawn tight and fixed by the hands of an assistant instead of employing a ligature. His incisions were made with such velocity that the eye could scarcely follow them; and to superficial observers, to those who were mere spectators, his amputations appeared splendid. But in myself, who assisted Dupuytren at these operations, the admiration was mingled with regret. I had to watch and dress the patients, and could not shut my eyes to the results. The stumps were often conical in the wrong sense; sometimes even the bone was salient and afterwards exfoliated. Those who witnessed the operation only went away impressed that Dupuytren's amputations were equal to his other operations, almost all of which were excellent. This was unfortunate, for had it been otherwise, the general opinion of the profession would have been against his plan, and he might have been induced to alter it. His great fault lay in not devoting his first incision to the division and preservation of the integuments. This he either did not see or thought he could counteract by preserving an additional quantity of muscle; for he was aware that his stumps were often faulty, and I have frequently seen him make more than three sections of the muscles, and also dissect up round the bone, whispering as he proceeded, 'Surely I shall preserve soft parts enough here!' as if determined to procure a good stump."

The latter half of the article is devoted to the description of particular amputations, and contains a pretty full account of the various modes of amputations recommended by the most eminent surgeons, whether in this country or on the continent.

In treating of amputation at the hip-joint, the author enumerates about seventeen cases in which the operation has been successfully performed; it has however failed, as might well be supposed, in a considerable number of cases, even when performed by the most eminent surgeons. The relative proportion of successful to unsuccessful cases is not known.

Mr. Abernethy recommended the operation to be performed by the circular method, and this mode is also preferred by Gräfe. It has been carried into effect by Mr. Colles and by Krimer. "The majority of the amputations hitherto performed at the hip-joint have however been executed according to the flap method, or some of its modifications." Of the various modes of performing the flap operation, the authors consider that "those which contain most skin and least muscle are best; as the liability to inflammation and extensive suppuration will be least in flaps so formed. This is one excellence in the mode of proceeding recommended by Mr. Guthrie and Dupuytren."

The woodcuts with which the volume is illustrated are very unequal in quality: those contained in the early numbers, as for instance in the present article, are only moderately well executed diagrams. In the latter numbers we are glad to see a decided improvement.

Angeioleucitis. This article is written by M. Velpeau, and is a valuable contribution to the Cyclopædia, whether we look at its intrinsic merits as a practical paper on an important form of disease, or consider it in the light of an attempt to supply, what has been hitherto a desideratum in medical literature, a systematic account of acute inflammation

of the lymphatic vessels; and to draw the lines of demarcation between this and some other diseases with which it has frequently been confounded, namely, phlebitis and phlegmonous erysipelas. That M. Velpeau has left nothing more to be desired on these several points is more than we will undertake to assert, but we are quite ready to accept this contribution of his towards a general history of the disease, and to thank him for the able manner in which he has broken ground.

Certain forms of angeioleucitis, especially as affecting the superficial absorbents, have long been familiar to practical men, but we should be at a loss to name any very good account even of these; and the want of anything like an accurate history of the disease in general will justify us in giving a somewhat extended summary of the paper before us.

"The lymphatic system," says M. Velpeau, "is capable of becoming inflamed in different ways and in various degrees, like the other tissues of the body. Here as elsewhere we observe inflammations to arise from direct and indirect causes, from contusions, or solutions of continuity, either of the lymphatic vessels themselves or their ganglions [glands]. But this inflammation nevertheless, at its commencement, most commonly has its source in diseases quite foreign to the organs of which we are now speaking; and it will be readily recognized [acknowledged] that almost all the diseases of the lymphatic system arise in consequence of fluids either produced or vitiated by inflammation being introduced therein by absorption or imbibition, and carried from the periphery [surface] of the body to the centre.....If the inflammation, affecting the canalicular [?] portion of the lymphatic system have hitherto attracted so little attention, the reason is, that being in the majority of cases difficult to be recognized directly, they have been either mistaken for or confounded with the diseases of some other system; that of the veins for example."

One essential difference in the character of these inflammations, according to the author, results from the matter absorbed having undergone changes consequent on exposure to the atmosphere, or having been free from this operation.

The symptoms of angeioleucitis are local and general, the former varying according as the disease affects the superficial or the deep-seated absorbents. Inflammation of the superficial absorbents almost always arises from a wound, inflammation, or suppuration of the skin, some unhealthy change, such as an increase of the inflammation or otherwise of the affected part having preceded it.

"An erythematous blush appears round those wounds or ulcers that had been dressed with deteriorated adhesive plaster or rancid applications, or which had been covered with incrustations; streaks, bands, or patches, varying in colour from a bright or rosy red to a wine or violet hue, soon appear at other points of the diseased region. These bands are tortuous, irregular, and cross each other in such a manner as to form small islets of sound skin, and follow the tracks of the lymphatic vessels. They do not show themselves first on the parts nearest to the wound; those first seen are even sometimes at some distance above it."

Erysipelatous patches appear at first disseminated, but afterwards grouped together into a sort of erysipelas, commencing first round the diseased part, from which the inflammation extends to others; or the patches may appear simultaneously at separate points, connected by the red lines or streaks. The pain felt in these red patches is acrid, resembling that of a part sunburnt; the swelling is at first slight, but extends irregularly in depth and surface, and is developed in a knotted form

around the lymphatic vessels and glands rather than taking the course of the cellular tissue properly so called.

"At first the tissues retain a certain degree of suppleness notwithstanding the swelling and redness. At a later period the tension increases, and their feeling [?] is like that of sponge; to the finger they seem as if they were œdematous, and are in reality the seat of infiltration; the tension, however, has not a frank,[?] elastic, and regular character, nor is it the same as we find in the doughiness of acute phlegmon or phlegmonous erysipelas. ..... When the attack occurs first in the deep-seated lymphatic vessels, as sometimes happens in the case of wounds or ulcers that pass under the fasciæ, as also of contusion, inflammation, abscess, or ulcer, the symptoms assume a somewhat different character. It is the pain that first attracts notice."

This pain is described as a fixed one, not radiating in lines from a given point, nor diffused, nor remittent, but fixed in particular spots.

"The tumefaction comes on afterwards, or it may occur almost at the same time and in the same places as the pain. It proceeds and is developed from the centre to the circumference. It is observed under the form of masses of more or less extent, of thick and long cores, but there is no appearance of patches as in the case described already. Its origin is without difficulty recognized to be from beneath the fascia, and the tissues are less dense in proportion as they are nearer to the skin, which retains for a long time suppleness and a certain degree of mobility."

The redness is not manifest until later, and is less superficial than in the former variety. The skin is stretched, and has a whitish or pale rose rather than a red colour. Generally speaking, it is the deep lymphatic ganglions that first swell and become painful. "It would however be wrong," observes the author, "to suppose that the two plans [?] of the lymphatics may be thus long affected independently of each other. More frequently, on the contrary, the affection of the superficial lymphatics is communicated to the deep-seated vessels, and vice versâ."

General symptoms. These commence sometimes with mere horripilation, at others with irregular rigors alternating with great heat and dryness of skin. "The pulse, always frequent, is at one time strong and full, as in an inflammatory fever, at another small and irregular, as in low fever." Thirst, anxiety at the precordia, nausea or vomiting, are often present. Watchfulness and agitation, with confusion going on often in the course of some days to delirium, denote the affection of the nervous system. "A part or the whole of the above symptoms may be present before the local symptoms become developed." The tongue, at first soft and covered with a grayish or yellow fur, becomes dry and rasplike, and finally cracked as in typhus fever; the gums and mouth are fuliginous.

The symptoms above described, the author thinks, are evidently due in part to the inflammatory process going on, and in part to the infection of the blood from matters absorbed, a mode of accounting for them which appears, to say the least, reasonable.

Angeioleucitis may terminate in *resolution*, especially when the disease is limited to the superficial absorbents, but very frequently suppuration takes place when the red patches are numerous and run into each other, and when painful cores of some thickness are felt beneath them. The pus is either infiltrated along the course of the red streaks or collected in abscesses chiefly below the red patches: fluctuation is not felt till a late period: one abscess is generally a precursor of others; the author once

saw twenty-five in the same individual. Though the pus is thin, the secretion soon ceases and the parts heal.

"The termination by *induration* without suppuration is rather uncommon, and occurs almost exclusively in chronic angeioleucitis." When it occurs "the lymph which remains in the state of infiltration in the meshes of the cellular tissue is but slightly altered, and sufficiently concrescible to have a constant tendency to combine with the tissues which it has swollen or hypertrophied, and which it transforms into lardaceous layers and masses.

"Angeioleucitis may terminate in death, either at the time when the inflammatory reaction is at its height, or towards the end, when the suppuration is prolonged. It may be apprehended in the first case when high delirium, a dry mouth and nausea, accompany an extensive inflammation, which continues unabated till the eighth or tenth day. It may also be dreaded in the case where the inflammation is extensive, deep and severe, more especially in an individual of a broken constitution or advanced age, and when the suppuration threatens from the first to be vast and abundant. At a later period the fatal termination is brought on by the recurrence of the abscesses, through the exhaustion arising from the abundance of the purulent secretion, from the occurrence of fresh attacks in the viscera, or from effusion into the serous cavities, and vitiation of the blood by its mixture with the pus or absorbed substances."

The diseases with which, according to M. Velpeau, angeioleucitis is most likely to be confounded are phlebitis, erysipelas, neuritis or neuralgia, and phlegmon. The author has entered at some length into the diagnosis between this disease and phlebitis, and we should willingly transfer his observations to our pages but that they are too extended to allow of this. The principal points are, that in phlebitis the red bands are fewer, deeper, and less frequently crossed, and more like hard cords. The red patches are less constant and fewer. Suppuration is more rapid, and the pus looks as if mixed with decomposed blood; and when several abscesses occur, they are developed in the course of the venous trunks, and not in different regions of the limb. Tumefaction is less, and the skin neither tense nor shining, but thickened or inflamed. The lymphatic glands are unaffected. The general symptoms in phlebitis have less of the inflammatory and more of the adynamic character, stupor and prostration sooner come on, and death more certainly ensues when the general symptoms are developed than in angeioleucitis.

"As a local inflammation the former is very easy, the latter very difficult to check. As a general affection the case will be exactly the reverse of this. .... It must, however, be admitted that these two forms of inflammation exhibit a close affinity in regard to their causes, their mode of production, and their deadliness. It would therefore be improper to attempt to isolate them by means of perfectly defined signs and limits. Their tendency to unite both at the commencement as well as through their course, the symptoms that are common to both, and the difference as regards the dangers incident to them are quite enough to challenge all the attention that the practitioner can bestow on the distinctive characters of these two diseases."

With regard to some of the other affections with which angeioleucitis is sometimes confounded, such as neuralgia or common erysipelas, the diagnosis is more easy, and we think it hardly necessary to quote any of M. Velpeau's observations on this part of the subject. In phlegmonous erysipelas the differences are perhaps less strongly marked, but even here the gradual progress of the disease, involving all parts through which it spreads, instead of the appearance of scattered patches or indurated

cores, the rapid formation of purulent matter, the absence of swelling in the lymphatic glands, and the late appearance of serious general symptoms are sufficient to distinguish the two diseases. Not unfrequently, however, the diseases are complicated with each other.

"A most remarkable instance of this," observes M. Velpeau, "occurred in my own wards in the months of March, April, and May, 1837: almost all the patients that had been affected with angeioleucitis were soon after attacked with erysipelas strictly so called, or with phlegmonous erysipelas, and in like manner those who were first attacked with erysipelas soon presented it complicated with angeioleucitis."

The pathological alterations resulting from inflammation of the lymphatics consist of changes in the vessels themselves, in the tissues around them, or in distant organs. Even when surrounded by broken-down and suppurating tissues, the lymphatics are often found still permeable, with thickened coats and their inner surface slightly tomentous, especially where vessels meet or valves are numerous. The surrounding cellular tissue is in some places healthy, in others more or less disorganized, infiltrated, hardened, or broken down. The muscles and nerves are little altered. The blood, when the disease is of some standing, is generally very fluid. Pus has not been found in it. In the parenchymatous viscera abscesses are rarely found, and when present are small. Sero-purulent effusions are frequently observed in the pleuræ, peritoneum, and joints. "On the whole," observes the author, "the internal lesions found after death are often very disproportionate to the symptoms observed during life." The plan of *treatment* found most successful by M. Velpeau is as follows:

"If any wound exist, whether it be recent or of long standing, it is covered with a thick poultice: if there be any arterial reaction, recourse is had to general bleeding; the quantity abstracted to be somewhat considerable, to be followed up by the use of a tepid bath for an hour; twenty or thirty leeches are applied round the wound when it appears red and swollen. After these means compression with a roller will be of use, its action will be promoted by wetting it several times during the day with some resolvent fluid. Cold water perhaps would answer very well in this way. If compression is not followed by the desired effect, mercurial inunction is indicated. The plan I pursue is to have two drachms rubbed in three times in twenty-four hours over the entire extent of and a little beyond the painful region..... As soon as any fluctuation can be detected, no matter how obscure at any point, the bistoury must be made use of at once, all these abscesses requiring to be largely and promptly opened. At this stage recourse may again be had to poultices over the suppurating parts, and to compression if the form of the part will allow of it. When resolution does not take place, and the suppuration is tardy, it will be right to employ blisters. They may be applied in succession or simultaneously over the points where the inflammation was most intense, and which are still the most engorged. The larger the blisters the more certain their good effects, acting either as the best maturatives or the best resolvents that I know of. In many such cases I can speak decidedly as to their good effects, having succeeded in a little time by means of them either in dispersing or producing suppuration in masses which seemed to be unalterably indurated. When there is delirium or great agitation I also employ them from the beginning, arranging them in such a manner as to cover over the whole of the diseased with some of the sound parts. They are removed in twenty-four hours with the epiderm, and the exposed parts are powdered with camphor to protect the urinary passages."

In another place M. Velpeau says, "I am not afraid, for example, to

envelope the whole limb, from the shoulder to the finger, or from the groin to the knee, or from the knee to the toes. The general and local symptoms are by this treatment arrested so rapidly, that in a week or two a revolution which could scarcely have been expected is effected. This plan of treatment may justly be considered as heroic."

As regards chronic angeioleucitis the appearances presented are so different from those exhibited in the acute disease, that it is everywhere described under other appellations. M. Alard has shown that it forms an important element in elephantiasis, as it does also in other chronic diseases of the skin.

In the latter part of this volume there are several contributions from the hand of Mr. Spencer Wells. The article Bronchotomy consists in the main of an essay for which he obtained the prize of the Dublin Medico-Chirurgical Society for 1839, preceded by a historical review of the subject from the earliest ages of surgery to our own times. The article is a very good one, and we congratulate Dr. Costello on having added so able a working member to his list.

The articles on Midwifery in the eighth number, namely, Crotchet, Detruncation, and Deliverance, are by the same hand. The two former are brief and hardly call for comment In the latter we see little to object to except the title, one of those new importations with which Dr. Costello has frenchified his work, and very unnecessarily, since there is often nothing, as in the present case, to recommend the adopted name. *Délivre* is a term in common use for the placenta in France, and *delivrance* is an unobjectionable derivative, but to the English ear deliverance conveys no meaning except one likely to be confounded with delivery. Under the head of Placenta might very well have been included all that is here given, indeed some of the discussions would have been much more appropriately entered on under that title than under deliverance. Had we not entered so largely in our last Number into the discussion of obstetrical questions, we should have been glad to have enriched our pages with some extracts from these able papers of Mr. Wells.

The articles *Balanitis*, *Bubo*, and *Condyloma* are by Mr. H. J. Johnson. The latter "is substantially a reprint of a paper which appeared in the Medico-Chirurgical Review for July, 1834, with such alterations and additions as further experience and the publications of other gentlemen have given birth to."

Mr. Johnson arranges condylomata under three heads: the first he terms the *simple condylomatous excrescence*, as it occurs independently of venereal taint, and is merely the result of irritating secretions; the second and third kinds he calls *non-ulcerated venereal condyloma*, and the *ulcerated venereal condyloma*. "The second and third varieties," says Mr. Johnson, "are probably rather grades of one than possessed of specific differences. And yet they do differ."

The second form of condyloma he describes as a flat, superficial, nearly circular deposit in the cutis. It is soft and smooth on its surface, is evidently vascular, generally of a pinkish sometimes of a bluish tint, according to the locality and the vigour of the circulation; it varies in thickness from that of a sixpenny to nearly that of a penny-piece; in circumference it seldom exceeds the former and is often little larger than a split pea.

The third form is distinguished by the fact of ulceration having taken

place on the surface of the deposit. "On some the ulceration is very superficial, the appearance being that of a mucous membrane or a fine moistened cuticle; on others there is distinct flat ulceration; and on others the ulceration may be rather cupped. The tint is generally red; seldom, save in the cupped ulcerations, yellow. The base or substratum of all is firm, for the obvious reason that each is a condylomatous deposit."

These forms of condyloma are in either sex attended with a discharge like that of chronic gonorrhœa. "I presume," says Mr. Johnson, "that in many if not in most instances the discharge and the condylomata stand in the relation of cause and effect to each other. But once produced, the condylomatous sores undoubtedly have the property of giving rise to fresh ones both in the same and other individuals." The facts which have been mentioned prove the first position. The second is established by artificial inoculation as well as by experiments of a less premeditated character. Three cases are related, in the first of which a gentleman acquired what seemed a common syphilitic sore from a female who was found on examination to have the labia and inside of the thighs studded with ulcerated condylomata, with a vaginal discharge, but no other sores. Both patients got well under the use of mercury. In the two latter, condylomatous sores appeared on the penis and scrotum after ulcers which had assumed a phagedenic aspect under the use of mercury. These forms of condyloma, especially the third, are followed, says Mr. Johnson, by unequivocal secondary affections, and he therefore considers them "entitled to rank amongst the forms of syphilis." He enumerates bubo, ulceration of the throat, affections of the tongue and lips, and various cutaneous affections, as sequelæ of condylomata.

"The condyloma attends chronic discharge, is probably generated by it, and forms perhaps the link between those affections of the mucous membrane of the vagina and urethra which seldom occasion secondary symptoms, and the sores which are so prone to do so. The study of condyloma seems to me to derive a large share of interest from this consideration, for if it be correct, we find in condyloma a sufficiently powerful machinery for the constant production of specific sores, and an argument of no mean force in the hands of those who contend for the extreme antiquity of syphilis."

Mr. Johnson's communications are all practical and sound, and therefore valuable.

The articles upon Diseases of the Eye are by Mr. Tyrrell, Mr. Middlemore, Dr. A. Watson, and Mr. T. W. Jones. They all appear to be well executed; but we must postpone any notice of these until some future period.

Several other papers of value would have claimed attention from us at the present time had we not already noticed them in former Numbers of our Journal at the time of their publication: amongst these are Mr. Tyrrell's paper on Amaurosis, Dr. Wardrop's on Aneurism, and Dr. Walshe's on Cancer. An extended notice of Dr. Willis's work on Urinary Diseases, and of Dr. Wardrop on Bloodletting at the time they appeared will also justify our passing unnoticed at present their contributions on Calculus and Venesection. We cannot, however, conclude this article without noticing, at some length, an excellent paper by Dr. Walshe on a subject which has been but little investigated in this country, and, we believe, is but ill understood.

Cephalhæmatoma. We believe we are correct in stating that the profession is, in the article before us, indebted to Dr. Walshe for the first systematic and complete essay in the English language, upon this very peculiar and interesting affection. We trust that the circulation of his performance will put an end to the curious confusion existing in the minds as well as the writings of obstetricians respecting the nature of the affection; that this will at length cease to be considered identical with or a mere modification of the common scalp-swelling or sero-sanguineous œdema of new-born infants. We may take credit to ourselves also for having in previous Numbers of this Journal laboured in this field, a fact which will be the apology for our scarcely entering into the subject at present.

Dr. Walshe recognizes three species of the affection according to the precise situation of the effused blood: the *extra-cranial*, the *intra-cranial*, and the *interstitial*. The former species is divided into two sub-species, the *sub-pericranial* and the *extra-pericranial*, terms which explain themselves. The interstitial species Dr. Walshe admits rather interrogatively.

The writer states that one of the objects proposed in his essay is to "exhibit, in the present diversity of opinion on some important points, the ample field still left for accurate enquiry." We shall indulge in one extract sufficiently proving that Dr. Walshe has not failed in his purpose:

"The contradictory opinions held on the anatomical condition of the parts in this affection leads us to expect anything but harmony on the subject of its causes and mechanism. Numerous observers contend that it is caused by violence directly applied to the part during protracted labour, either from impaction (Feiler), or pressure against the sides of the pelvis (C. C. Klein); or from contusion with the forceps, &c. (F. B. Osiander.) But these practitioners, and others who have adopted very similar notions, have doubtless confounded the affection, which we now describe, with common œdematous scalp-swellings; for accurate observation has proved that it occurs most frequently after easy labour, during which the head has not undergone any notable pressure. Not a single one of Naegele's cases occurred after laborious parturition; Meissner, Hüter, and Valleix have observed it in infants extracted by the feet; it has been found in the second born of twins presenting the breech; and we have seen how frequently its existence has been ascertained before or immediately after the rupture of the membranes. Hence the opinion referring the affection to severe pressure or contusion is untenable. Michaelis ascribes the effusion to the exposure of the diploe resulting from the carious destruction of the external table; of this opinion we have already seen the error. Naegele vaguely refers the rupture of vessels to abnormal development of the bone; Meissner and Neumann to displacement or riding of the bones of the scalp during labour; Brandau to a congenital relaxed state of the vessels of the head; Stein fancies the disease produced by an abnormal disposition of the vessels; Siebold by a state of the vascular system of the bone analogous to the aneurism by anastomosis of the soft parts. All these notions are either clearly shown to be incorrect by the previous description, or at the best insignificant and hypothetical. Busch having observed a large blood-tumour on the occiput of a child delivered with the forceps, which communicated with the sinuses, deduced a general theory of the disease from this example of a totally different affection. Dzondi believes the proximate cause of the affection to consist in imperfect development of a part of the parietal bone, the diploe of which is *at the time of birth uncovered by an external table.* The delicate vessels of the diploe are burst, he supposes, by the forcible rush of blood to the head, consequent on the action of the uterus or of pressure against the sides of the pelvis. The imperfect development of

the bone in the affected part he attributes to the continuous pressure of the promontory of the sacrum on the head, and especially on either parietal bone. M. Paul Dubois considers that from the extreme facility with which blood may be expressed from the infant cranium after the separation of its investing membranes, such separation, if it occur during life, must lead to the formation of cephalhæmatoma, and hence that the causes of the former are the true problem. These, he maintains, may be of various kinds, either, for example, unnaturally lax union of the pericranium and bone, violence down to the head, or disease of the osseous tissue itself."

Dr. Walshe then explains the doctrine which has recently been maintained by M. Valleix; of this we have elsewhere stated the substance.* The author states the opinion which he has himself been led to form upon the cause of the affection in the following terms:

"On the whole it appears that the effusion mediately depends on imperfect development of the external table of the bones, and lax adhesion of the pericranium; immediately upon any causes affecting a separation between the latter and the bony surface of these, circular constriction of the cervix uteri is probably the most frequent, but certainly not the sole, as indeed M. Valleix himself allows may be the fact. Respecting the state of the bone itself and the influence of this on the effusion, it will be observed that there is the evidence of three authors in favour of the absence of the external table; that of Michaelis, who conceives it due to local caries; of Dzondi, who ascribes it to local abnormal suspension of development from pressure; of Valleix, who maintains such imperfection the natural condition at this period of existence. That it is wanting in, at least, some cases of cephalhæmatoma is more than probable, but this may be accounted for in various ways; it is not impossible that in cases preexisting to birth the collection of blood may have really formed in the diploe and destroyed the ill-formed outer table by pressure; were this the fact, subpericranial would be only an advanced stage of interstitial cephalhæmatoma."

The following paragraph on the diagnosis of the affection is valuable:

"Among the affections for which this form of cephalhæmatoma is liable to be mistaken is *congenital encephalocele.* The points of distinction between them are nevertheless, as may be gathered from the subjoined enumeration, numerous and clearly defined:

"Subpericranial Cephalhæmatoma.	*Hernia of the Brain.*
Is the seat of fluctuation.	There is no fluctuation, unless water be contained in the hernia.
Is perfectly indolent.	Is occasionally the seat of pain, especially under pressure.
Pressure produces no cerebral symptoms.	When large, cerebral symptoms frequently arise spontaneously; these are greatly increased by pressure.
Nor does it change the size of the swelling.	Pressure diminishes its bulk, which it reacquires when the pressure is removed.
The investing skin and hair are in the natural state.	The skin is thinner than natural, and without hair.
Is never seated on the sutures.	In the vast majority of cases is seated on the sutures or fontanels.
Is tense and hard.	Is elastic and soft.
Pulsation is extremely rare.	Pulsation is an ordinary symptom.
Is uninfluenced by the respiratory movements.	Swells during expiration, and sinks during inspiration.
Apparent perforation, caused by the elevated bony ridge.	Real opening in the skull, either between the sutures or through the substance of the bones.
Is never pedunculated.	Inclines to the pedunculated shape, which is often very marked.

* Vide Br. and For. Med. Rev., vol. VII. p. 89. Jan. 1839.

"It seems hardly possible to confound this affection with ordinary *hydrocephalus;* a *subfascial aqueous cyst*, spoken of in Zeller's thesis, might be distinguished by the absence of the bony elevated rim. *Erectile tumours* of the scalp are soft, spongy, easily depressible, lessened in size by pressure, recovering their former dimensions by successive influxes of blood, expand when the infant cries or coughs, are of a bluish-violet tint, have no prominent elevated border, and are not the seat of fluctuation;—the characters of cephalhæmatoma are in all respects the reverse. *Encysted tumours of the scalp* are distinguishable by their being moveable, and by the absence of the elevated margin. *Perforating cancer of the meninges* is reducible, is not surrounded with a raised rim, and is otherwise specially characterized. *Collections of pus* under the pericranium, which may possess almost every external character of cephalhæmatoma, even to the presence of an elevated and indurated margin, M. Valleix presumes might be distinguished therefrom by the slow and gradual formation of the tumour, the pain in the part (?), and tenderness on pressure, as well as inferior degree of hardness of the surrounding prominence, which, it appears, contains no osseous matter, and is composed of hardened cellular tissue. *Common scalp swellings* are characterized by being almost invariably the result of difficult labour, by being seated on the part descending first into the cavity of the pelvis, by being always single, indistinctly circumscribed, of deep livid colour, non-fluctuating, pitting on pressure, rarely surrounded by an annular prominence, and disappearing in from twelve to forty-eight hours. The distinctive marks of extra-pericranial cephalhæmatoma will be presently stated. M. P. Dubois once met a combination of œdematous scalp swelling, extra and sub-pericranial cephalhæmatoma; under such circumstances an accurate diagnosis must be next to impossible."

We must refer to the original for a very full investigation of the therapeutical questions relating to the disease; but we cannot conclude without expressing our high opinion of the value of this communication, and of the clear and precise style in which it is written.

Several other papers in this volume are well deserving of attention, but from about 100 articles which it contains it was clearly necessary that a selection should be made; and this we have endeavoured to do in such a manner as to give the reader a fair estimate of the merits of the work. These merits are very considerable; and we feel that we may with a clear conscience, not only commend the first volume of the Cyclopædia of Surgery to a place on the shelves of all our readers, but state that the library of no modern surgeon can be complete without it.

The reader of taste will not have failed to notice the prosy and ungainly title of the work prefixed to this article. He will also have observed, in some of the extracts we have given, specimens of the outlandish diction wherewith it abounds, and which the learned Editor is pleased to inflict upon his readers as English. We wish we could say that these are the only editorial blemishes with which the work is chargeable. Still, as it is not the first time we have heard of gallant armies gaining victories in despite of their generals; and as we think most highly of the skill and courage of the Cyclopædian troops, and of the spirit and liberality of the central government in Paternoster Row, we look forward with confidence to the successful termination of the present surgical campaign.

Art. X.

1. *Rapport sur les Moyens de constater la présence de l'Arsenic dans les Empoisonnemens, &c.* Par M. Orfila.—*Paris*, 1841. 8vo, pp. 53.
Report on the Means of detecting Arsenic in Cases of Poisoning, &c. By M. Orfila.—*Paris*, 1841.

2. *De l'Arsenic, suivi d'une Instruction propre à servir de Guide aux Experts dans les cas d'Empoisonnement, &c.* Par MM. Danger et Flandin.—*Paris*, 1841. 8vo, pp. 301.
On Arsenic, with Directions for the Investigation of Cases of Poisoning, &c. By MM. Danger and Flandin.—*Paris*, 1841.

3. *Mémoire sur plusieurs Affaires d'Empoisonnement par l'Arsenic.* (*Mém. de l'Acad. Royale de Médecine*, Tome IX.) Par M. Orfila.—*Paris*, 1841.
Memoir on several Trials for poisoning by Arsenic. (*From the Memoirs of the Royal Academy of Medicine*, Vol. IX.) By M. Orfila.—*Paris*. 1841.

4. *Recherches Médico-légales et Thérapeutiques sur l'Empoisonnement par l'Acide Arsénieux, &c.* Recueillies et rédigées par le Docteur Beaufort.—*Paris*, 1842. 8vo, pp. 192.
Medico-legal and Therapeutical Researches on Poisoning by Arsenious Acid. By Dr. Beaufort.—*Paris*, 1842.

Since the occurrence of the "procès Laffarge," there has arisen among French medical jurists and chemists a violent controversy on the value of Marsh's test in cases of arsenical poisoning. We are sorry to perceive that this has degenerated into coarse personality, and that some of the disputants, instead of showing a zeal to develope the truth, have occupied themselves in attacking each other's opinions. Science, however, has derived some benefit from the discussions that have taken place at the Royal Academies of Medicine and Sciences. Committees of able and unbiassed men have been appointed to report on the relative value of the many processes suggested for the detection of minute traces of arsenic, and the results of their labours we have prefixed to this article.

One half of the volume of Messrs. Danger and Flandin is made up of the stormy discussions at the Academy. These matters we shall avoid: our object being to show simply what progress has been made in this important branch of toxicology.

In our Number for January last (No. XXI.) we gave a lengthened notice of the Memoirs on Poisoning, published by M. Orfila; and we there threw out certain doubts on the correctness of some of his views on the subject of arsenic. Orfila's experiments have been since repeated before the committee of the academy; and it is satisfactory to us as reviewers, as well as to all those interested in medico-legal researches, to find that the report now made by the committee fully corroborates the opinions which we then expressed.

Since the notice above referred to Orfila's processes for detecting arsenic have undergone some important modifications. In the use of Marsh's apparatus he relied chiefly upon certain chemical characters possessed by the metallic stains. When the quantity of poison is small, as must always be the case in delicate analyses where the usual tests

fail, it is scarcely possible to determine these characters in the manner recommended by Orfila; hence a doubt was fairly raised on the safety of this method in cases requiring judicial investigation. MM. Danger and Flandin have fully appreciated the weight of this objection, and have endeavoured to remove it by suggesting a simple process for transforming the poison into arsenious acid, and then examining the product in the ordinary way. This is undoubtedly preferable to any analysis of stains; and it has the advantage of removing every possible objection to the use of Marsh's test. We shall commence with an examination of their work.

In giving an historical account of the processes used for detecting arsenic, the authors ascribe the merit of the discovery of the reduction of arsenic by hydrogen to their countryman Sérullas, (p. 3,) Mr. Marsh is represented to have borrowed the idea from Sérullas. We consider this decidedly unjust; no one ever heard of Sérullas' experiments on the properties of arsenuretted hydrogen until Mr. Marsh's discovery was announced; and all candid persons must agree that he alone is entitled to the merit of being the original discoverer. The advocates of Sérullas are claiming much more for him in this matter than we believe he would have claimed for himself.

MM. Danger and Flandin appear to have first directed their enquiries to the alleged existence of arsenic, as a normal constituent of certain parts of the human body. They were surprised at finding, from repeated trials, that not only did different processes give dissimilar results, but that the same process did not always give identical results. These differences were due to apparently trivial circumstances connected with the mode of operation. The plan recommended by Orfila of carbonizing the organic matter by means of nitric acid, they found to be exposed to serious defects. It is unnecessary to refer to the many trials made by them before their process was completed; but it may suffice to state at present that they could obtain no traces of arsenic from the solid, liquid, or volatile products resulting from the destructive distillation of large portions of the human body. They procured, however, stains on porcelain by the use of Marsh's apparatus, so closely resembling those of arsenic in physical and chemical characters, as to be easily confounded with them. "Thus the flame resembled that of arsenuretted hydrogen in colour and odour; the metallic stains were easily volatilized by directing on them the point of flame, they were soluble in nitric acid, and the solution thus obtained was precipitated yellow by sulphuretted hydrogen gas, and of a brick-red colour by nitrate of silver." (p. 11.) These stains were due to a combination of sulphite and phosphite of ammonia, with some volatile animal matter; and the experimentalists state that they succeeded in synthetically forming the substance from which they could be produced.*

On discovering this fact, they naturally doubted whether arsenic had not been erroneously pronounced to be a normal constituent of the human body; and the only way to remove this doubt consisted in entirely destroying every trace of organic matter in a close vessel, and submitting the pure saline residue to analysis. A somewhat complicated apparatus

* It is stated (p. 10,) that a mixture of 88 parts of ammonia, 10 parts of phosphite (?) of ammonia, and 2 parts of essential oil of turpentine, will, when introduced into the apparatus, yield stains resembling those of arsenic.

was employed for this purpose, and the result was as we have stated, no arsenic whatever could be detected in the organs of the body. The bones and the soft parts gave equally negative results, and there could be no doubt that the stains, pronounced to have been arsenical, were really due to products formed during the decomposition of the animal matter. The soil of different cemeteries around Paris gave stains with Marsh's apparatus, as also flour and bread; but in all these cases the stains were similar to those above mentioned, and were not of an arsenical nature.

These results were of the highest medico-legal importance; and the authors having thus disproved the existence of arsenic as a normal constituent of the body, next proceeded to experiment on animals which had been intentionally poisoned by that substance. They found that when gradually increasing doses of arsenic had been given to dogs without any apparent suffering being produced in the animal, the solid excrements alone yielded traces of the poison. None was discovered in the urine, either during life or after death; but when death was the direct result of a speedy effect of the poison, the viscera and the muscles gave evident indications of the presence of arsenic in them. The authors are at issue with Orfila as to whether animals destroyed by the acute form of arsenical poisoning micturate or not! They contend that no urine is passed, and that after death the bladder is found empty. The committee have not thought it beneath their dignity to enter into this very unimportant part of the controversy, and to make a report upon what must be really an accidental condition.

By far the most important part of the work is the process recommended for detecting arsenic in the tissues of the human organs, where the ordinary means of analysis entirely fail. It is undoubtedly true that, in numerous cases where arsenic has destroyed life, none of the poison can be detected in the cavities of the viscera; a circumstance which, although easily explicable on pathological principles, generally excites a doubt of the real cause of death in the minds of non-professional persons. Courts of justice unwillingly convict where the poison is not found in the body, and in many instances, as where a body has been long interred, a conviction would be absolutely impossible unless the poison were discovered. It is necessary to remember in these enquiries that the facility with which arsenic is detected in the dead is to be ascribed to the unnecessarily large quantity of poison which is commonly exhibited. Ordinary chemical analysis is directed to the surplus quantity left in the stomach or intestines, in other words to that portion of the poison which has not destroyed life. Copious diarrhœa or vomiting, the free exhibition of diluents, or where life is protracted, the power of absorption may entirely remove the poison from the viscera. In all these cases, the most important branch of medical evidence is lost, and should chemical evidence be deemed essential by the court the prisoner will owe his escape to the violence of the symptoms under which his victim laboured, or to the kind of treatment adopted! The credit is due to Orfila for having first proposed in these cases to seek for that portion of the poison actually absorbed into the system, which has probably caused death. He has shown that arsenic may be detected in the blood, soft organs, and muscles; and although, as we have stated elsewhere (No. XXI.), he has relied too implicitly upon the physical characters of the stains produced in the use of Marsh's appara-

tus—or what amounts to the same, he has trusted to chemical characters uncertain of application in such minute quantities, yet medical jurists owe much to him for pointing out the means of obtaining evidence in cases which have been hitherto abandoned as hopeless. Our authors, in following the steps of Orfila, have, to a certain extent, improved upon his process. So long as stains were considered to furnish evidence of the presence of arsenic, it was natural that a doubt should be entertained of the soundness of the opinion expressed, especially when the quantity of the supposed poison was infinitesimal, and the apparatus producing it was new and, comparatively speaking, untried. Now, however, that the poison may not only be extracted from the organs of the person poisoned, but by the use of their apparatus actually reproduced, free from any trace of organic matter in its original state of arsenious acid, so that every known test for arsenic may be applied to it, no one can hesitate to admit that a considerable step has been made in medico-legal analysis; and that we have at length attained to the same certainty of evidence with regard to the absorbed poison, which has hitherto been confined to that portion only found loosely dispersed in the stomach and intestines.

As the process of MM. Danger and Flandin has only just appeared before the public, we shall briefly describe it to our readers. It consists of two parts: 1st, the carbonization of the organic tissues, so as not to destroy the poison; and 2d, the transformation of the arsenical compound produced into arsenious acid.

The separation of organic matter in a liquid containing arsenic by the use of chemical reagents has been entirely abandoned. The only safe principle on which we can proceed is so to decompose the organic matter, as to render it perfectly insoluble in water, and at the same time while we prevent the loss of arsenic to render it easy of extraction in the state of salt, by water. These facts premised, the following description of the process will be easily understood:

"In order to decompose the animal matters, we digest them in a porcelain capsule with strong sulphuric acid, in the proportion of from $\frac{1}{8}$ to $\frac{1}{2}$ their weight, according to the quantity of fatty matter present. [The animal substance, which in an experimental trial may weigh about an ounce, is previously cut into very small pieces.] The mixture is then gradually heated to between 600° and 700° (360° c.) Carbonization takes place rapidly without any frothing, and if a sufficient quantity of sulphuric acid has been employed, the carbon resulting is dry and pulverulent, and by digestion in water a solution containing traces of arsenic might be procured. Should the carbonaceous residue be unctuous and greasy, the vessel may be withdrawn, and when cool more sulphuric acid should be added, and the mixture again evaporated to dryness. According to our experiments there is no compound of arsenic that gives a more delicate reaction with Marsh's apparatus than arsenic acid, which besides, being a deliquescent substance, can easily be separated from the insoluble matter by a very small portion of water: hence, after having thoroughly dried the carbonaceous residue, we treat it with a mixture of three parts of nitric and one part of muriatic acid, adding just enough to moisten perfectly the pulverized carbon. . . . . When the mass has been heated to dryness, the residuary carbon is digested in a small quantity of water, and the solution filtered. The liquid thus obtained, contains so little animal matter, that it is perfectly limpid and colourless, and when introduced into Marsh's apparatus it never yields any froth." (p. 24.)

The carbonaceous residue, it is remarked in another place (p. 38),

should be treated several times with water to ensure the solution of the whole of the arsenic acid, and these different solutions may be then mixed and concentrated by evaporation.

The report of the committee on this process gives some additional particulars which may be here mentioned:

"The exact quantity of sulphuric acid which it is necessary to employ cannot be determined à priori: it depends on the state of the animal substance, the more fresh and humid this is, the larger the quantity of acid required: thus when blood is under examination, the proportion of acid must be at least one half. The capsule should be equally heated: the animal matter soon liquefies and dissolves in the acid, forming a dark unctuous mass. It is to be continually stirred with a glass rod, by which vapours of sulphuric and sulphurous acids are disengaged. In about forty minutes the operation is finished, the substance being converted into a friable charcoal." (Report, p. 25.)

When cool it is reduced to a fine powder, and then treated with nitro-muriatic acid in the proportions above described. This converts the arsenic to the state of arsenic acid, which is easily dissolved out by boiling water. Such then is the first part of the process. It is of course necessary that the sulphuric acid employed should be absolutely pure and entirely free from every trace of arsenic. It seems to us that a very high temperature is employed, and that a lower heat might answer, while there would be less risk of volatilizing any of the arsenic. The authors admit that the quantity of arsenic lost amounts to about one tenth; while by Orfila's process with nitric acid, no less than eight tenths were lost. The committee report very favorably on this mode of carbonization, considering it to be simple, convenient, and rapid in its execution: while they prefer it to the process by nitric acid, they think it inferior to that by nitrate of potash, the grounds for which we propose to examine hereafter.

Thus then the poison absorbed into the body is brought to the state of arsenic acid, and there is no necessity for employing Marsh's apparatus for determining the real nature of this compound. There are many tests, including that of reduction by means of flux (for which purpose we prefer the calcined acetate of soda), which will show that we have really an arsenical compound under examination; and these tests must convince the most sceptical, that medical evidence is not strained in such cases, or based upon doubtful experiments on infinitesimal quantities.

MM. Danger and Flandin prefer transforming this compound into the state of arsenious acid; and this they accomplish easily, by adopting a very ingenious condensing apparatus to Marsh's tube, so that the arsenuretted hydrogen is continually burnt with a low flame, and the arsenic is obtained partly in the solid state and partly in the form of a strong aqueous solution. This apparatus has the advantage of being simple and inexpensive; it may be safely used by those who have only been accustomed to the analysis of arsenious acid in a pure and unmixed state. We must refer our readers to the work itself for a description of it. (p. 28.) Thus then here no metallic stains are collected for analysis; indeed the production of them at all only becomes a collateral part of the process; and the result would not be the less satisfactory, although this part of the analysis were altogether omitted. In short the experimentalist has nothing to do with the production of metallic stains; he has merely to determine the chemical characters of arsenious acid, and

there are, we believe, very few of the modern race of practitioners who are not fully competent to this.

"The results which we have obtained in experimenting on the remains of poisoned animals by the process just described have been so exact, that in any case of poisoning, we do not hesitate to say, less than two ounces of animal matter (50 grammes de chair) will yield a ponderable quantity of poison, either in the state of arsenious acid, of metal, or in any other form of arsenical combination, according to the pleasure of the operator. Henceforth, it will not therefore be necessary to find traces of arsenic in a body, or to examine chemically the whole of a subject. In the greater number of cases, about two pounds of the viscera or of the muscles will suffice. A trial of a few drachms will serve to give sufficient evidence to guide the analyst in the subsequent process." (p. 31.)

It is then proposed that in the exhumation of the dead for judicial purposes, especially where decomposition has advanced, only certain portions of the viscera should be taken. Two or three pounds of an organ or of muscular fibre, might be even carbonized, and sent in a dry pulverulent state to any distance for further examination by experienced analysts. The authors propose that a council should be appointed, to whom all such analyses should be referred, and whose unanimous judgment would be stamped with an authority which would render it impregnable to the attacks of the envious or the ignorant. This is an excellent suggestion, and the plan proposed is one which might be adopted with great advantage in our own country. Simple as the details of this process may appear, it is a grave question, on the answer to which we think there can be but one opinion, whether the search after poison, on a charge of murder, should be entrusted to inexperienced hands. The English law unfortunately presumes that all belonging to the medical profession, however remotely, are competent to undertake such investigations, until the contrary appear. The presumption, however, is here on the wrong side; and until this principle is recognized by the legislature, the law must be administered in darkness and uncertainty. The essence of the defence in a charge of criminal poisoning consists in the ability of the counsel to throw doubt upon the vital part of the evidence, the chemical analysis. By the constitution of a medico-legal board, such as that recommended by MM. Danger and Flandin, no risk could be incurred, there would be at once security for the innocent, and certainty of punishment for the guilty.

The conclusions at which the authors arrive are as follows:

"1. That there is no arsenic in the human body in its normal state. 2. That in the carbonization of animal matter a soluble organic compound, consisting of sulphite and phosphite of ammonia, with some animal substance, is produced; and that this, when introduced into Marsh's apparatus, gives rise to stains, resembling in physical and chemical characters those of arsenic. 3. That Marsh's apparatus is not to be relied on in medico-legal cases, except where we burn the arsenuretted hydrogen, and operate on the products of combustion. 4. That where arsenical poisoning is suspected, the analyst must during life examine the fæces or vomited matters; and after death, if this event have resulted from the direct effect of the poison, he will find it diffused throughout the system, even in those organs which are most remote from the centre of poisonous action." (p. 33.)

Our opinion of this process will be judged of from the remarks already made. One of its great merits is, that it is equally adapted both to ordinary and extraordinary analyses. When arsenic is mixed up with organic matter, solid or liquid, it is often very difficult to make the principal

test act, namely, sulphuretted hydrogen gas. If arsenic be indicated by the colour of the froth formed in the liquid, or by the production of a yellow compound, it is either suspended, or the precipitate falls slowly, and is liable to be mixed with a large quantity of organic matter, which effectually prevents a satisfactory reduction of the sesquisulphuret to the metallic state. In all cases of this description, as where arsenic is mixed with gruel, soup, coffee, or such like substances, it would be advisable to evaporate the liquid so as to form a dry extract, and then carbonize it in the manner directed with pure sulphuric acid. In this way, within an hour or two an analysis of the most complex liquid might, according to the author, be made, while by the ordinary method the boiling and filtration would occupy several days. It may be further remarked, that if we have already begun the analysis with sulphuretted hydrogen, and converted the arsenic partially to the state of sulphuret, this would not interfere with the application of the process of MM. Danger and Flandin. Should the sesquisulphuret be precipitated in an impure state, it may still be transformed to arsenic acid by this method, and the analysis completed in the usual way.

In the process as applied to the organic tissues, we cannot conceive that it would ever be necessary to determine by analysis the quantity of poison present in a given weight of animal matter. It is not easy to understand under what circumstances a question of this kind would arise. The quantity might, and possibly does vary, according to the length of time which the individual survives. The mere discovery of the poison in any of the tissues of the body would, we imagine, suffice to establish the fact of poisoning. In a case of this description, it could not be urged that the poison might have been designedly introduced after death; its detection in the substance of the liver, spleen, or muscles, would at once set at rest any plausible objections of this kind. The only possible objection might be, that arsenic naturally existed in the body; but this we think is an inadmissible assumption, not to say that it is directly negatived by many experimental trials made on the various organs of healthy subjects.

The report of the committee is on the whole favorable to the process of MM. Danger and Flandin, though they prefer "Orfila's modification of Marsh's apparatus, which in their view admits of our obtaining an equally certain and more speedy result." (Report, p. 27.) The experiments which the authors performed before them, gave very clear and satisfactory results.

They object, however, to that statement of the authors', wherein it is asserted that stains resembling those of arsenic could be produced from certain saline products, resulting from the imperfect carbonization of organic matter. "The viscera of healthy animals were carbonized by the nitric and sulphuric acids and the nitrate of potash separately;" but under these very different circumstances, no result was obtained in the use of Marsh's apparatus, which could create any doubt. "The gas when inflamed yielded nothing but water." (Report, p. 22.) They admit it to be possible that the liquids procured from imperfectly carbonized products, where sulphuric acid is used, might, when placed in Marsh's apparatus, give rise to spots slightly resembling those of arsenic in physical, but differing entirely in chemical characters. Indeed there could

be no fear of a mistake upon the point, if the operator had the least experience on the subject. It seems by the report, MM. Danger and Flandin were singularly unfortunate in not being able to produce artificially any of these ambiguous stains before the committee. (Report, p. 23.)

Thus then the source of fallacy which they announced does not appear to exist. It seems indeed, that where the carbonization has been complete, the presence of such salts as the sulphite and phosphite of ammonia would be impossible. If by any chance, stains resembling those of arsenic were produced, they would, according to the committee, be easily distinguished by the negative results obtained with the arsenical tests. This, however, we must observe is quite a subordinate point in the enquiry, since the authors do not profess to rely upon the application of tests to a stain for the evidence of the presence of arsenic. They prefer converting it into a compound, the tests applied to which cannot be objected to by scientific men.

It rather surprises us that all the French chemists seem to be quite ignorant of the very simple method devised by Mr. Marsh about six months since, for determining whether the gas produced were arseniuretted hydrogen or not. The knowledge of it would have spared a vast deal of controversy on the subject of stains, and would have rendered it unnecessary to apply any tests to them to determine their real nature. The method to which we allude is the following: Ignite the gas, and hold, at about one inch above the level of the flame, a piece of porcelain or glass, moistened with ammonio-nitrate of silver. If there be arsenic united to the hydrogen, yellow arsenite of silver is immediately produced; if not, there is no yellow precipitate, but the salt is either blackened or undergoes no change. After this it is absurd to talk of applying chemical reagents to the stains. Paper moistened with hydrosulphuret of ammonia might be substituted, and acetic acid then added to detect sesquisulphuret of arsenic.

There is a far more material point in which the researches of the authors are fully corroborated by the results of the experiments performed before the committee, both by themselves and M. Orfila, namely, that in the various trials made with the most minute precautions, no trace of arsenic could be discovered as a constituent of bone, or of any of the other organs of the human body. (p. 89.)

It appears from their experiments, that Marsh's apparatus will easily detect the presence of arsenic, "when the liquid examined contains only $\frac{1}{1000.000}$ th part. Indeed stains begin to be formed when the liquid contains a proportion of about $\frac{1}{2000,000}$ th. The stains are not produced better with a large than a small quantity of liquid employed in the apparatus, the proportion of arsenic being the same in the two cases. But they are formed for a longer period in the former than in the latter case. Hence it is always preferable to concentrate the arsenical liquids, and to experiment on a small bulk: the stains thus procured are much more perfect." (p. 83.)

We have lately had occasion to examine the stomach and duodenum of a female who died in about thirty-six hours from the acute form of arsenical poisoning. The viscera had been preserved for about five weeks in spirit. We, in this case, adopted the process recommended by MM. Danger and Flandin.

About two ounces of the viscera were divided into small pieces and carbonized by sulphuric acid. So much froth was formed as to render it necessary to watch the decomposition closely. It was found to be a matter of some difficulty to expel the whole of the sulphuric acid from the carbonaceous residue; and although quite dry when first removed it speedily reabsorbed water from the acid present in it. The same difficulty occurred with the nitro-muriatic acid; and on adding to the aqueous solution, nitrate of silver, and ammonia, a yellow precipitate fell down closely resembling arsenite of silver. This was owing to the presence of a phosphate dissolved by the traces of acid, for of course no arsenious acid could be present. We consider, however, that a result of this kind, unless pointed out, might lead to fallacy. No trace of arsenic was detected in the solution.

It might be said that the acids would be easily expelled by the application of a higher temperature; but we have already remarked that we think there is some risk in using so high a temperature in the carbonization as that recommended by MM. Danger and Flandin. It is difficult to understand chemically how arsenic or any of its compounds can be heated to 700° in contact with carbon without being entirely reduced and volatilized. We have thought it right to make these remarks, since, however satisfactory the process may be in the hands of the authors, it is certain that some practice is necessary for success; and it is also possible that arsenic may not be always detected in so small a quantity of organic matter as two or three ounces.

We now come to the Report of the Academy on the various modifications of Marsh's apparatus, proposed by different chemists. As many of these must be entirely new to English readers, we shall briefly notice them, more especially since, in cases where circumstances prevent the employment of one plan, the experimentalist may easily select another.

M. Lassaigne has proposed to pass the arsenuretted hydrogen gas into a solution of nitrate of silver. Metallic silver is, according to him, precipitated, and the solution contains arsenious acid. When it is supposed that all the arsenic is evolved, the surplus nitrate of silver may be thrown down by muriatic acid, and we have a solution which, when evaporated, yields only arsenious acid. (p. 57.)

The committee satisfied themselves that arsenic might thus be separated; but the presence of that substance in a liquid could not be inferred merely from the decomposition of the solution of nitrate on passing into it the hydrogen gas. Sulphur or carbon contained in zinc might give rise to a similar change, and where the operation was carried on in a vessel exposed to light, pure hydrogen itself might decompose the nitrate. Hence arsenic cannot be admitted to exist in a liquid evolving hydrogen, except in those cases where it is actually separated from the solution after the decomposition. It has been suggested that a solution of chlorine or of an alkaline chloride might equally answer the purpose.

We feel it due to Dr. Clark, of Aberdeen, to state that a month before M. Lassaigne had deposited his memoir with the Academy of Sciences, Dr. Clark had read a paper on this mode of detecting minute portions of arsenic, in 1840, at the meeting of the British Association at Glasgow. By means of the nitrate of silver thus employed, Dr. Clark had detected arsenic in most commercial specimens of tin and zinc. He passed the

gas in the first instance through a solution of nitrate of lead, which served to detect and separate sulphur, while it had no effect on arsenuretted hydrogen. According to Dr. Clark, the precipitate formed in a solution of nitrate of silver is arsenuret of silver, and not metallic silver, as stated by Lassaigne. Since this gentleman has been able to procure arsenic from the precipitate, it is clear that Lassaigne's theory cannot be correct; and that if we trust solely to the analysis of the residuary liquid, as recommended by the French chemist, there may be little or no arsenic present. Dr. Clark has also announced a fact, of which M. Lassaigne does not seem to be aware, namely, that antimony contained in hydrogen produces the same effect on nitrate of silver as arsenic; hence, before a process of this kind can be safely employed, it is necessary that further experiments should be made.

In a letter addressed to the Academy by M. Signoret, it was stated that metallic stains might be procured with Marsh's apparatus, from a liquid containing only $\frac{1}{200,000,000}$th of arsenious acid. Many experiments were made by him on different specimens of zinc and sulphuric acid procured from different establishments, and he found that they all yielded traces of arsenic. His conclusion is, that it is impossible to obtain pure specimens of these substances in commerce, a statement, if true, of great importance to medical jurists. (p. 58.)

If this assertion of M. Signoret be correct, this will completely overthrow the process of MM. Danger and Flandin for the carbonization of organic matter, and the extraction of arsenic from the human body. We think it therefore right to state their reply, with the conclusions drawn by the committee on this very subject from the experiments performed before them. Commercial zinc may be easily procured free from arsenic; that which has been laminated is the most pure, and should be selected for these experiments. Orfila, however, in many experiments found very few specimens that contained arsenic. Danger and Flandin dissolved slowly in diluted sulphuric acid one pound and a half of laminated zinc, and carefully examined the hydrogen evolved; it did not yield a trace of arsenic, and the zinc was completely dissolved. (p. 77.) In other experiments the results were equally negative. Orfila in a similar way operated on *four pounds* of granulated zinc at one time; but not a trace of arsenic was procured. We believe the presence of arsenic in zinc to be the exception to the rule. In many experiments for several years with *laminated* zinc, we have never found any; and we think with the committee, that this is the state in which the metal zinc should be employed by medical jurists.

With regard to sulphuric acid it has been lately shown by Dr. Rees that this substance is sometimes impregnated with a large quantity of arsenic; probably where it is made from the sulphur obtained from iron pyrites. It is, however, easy to detect this impurity, and to avoid the use of an acid thus contaminated. Before proceeding to carbonize organic matter, or to employ Marsh's test for the saline residue, it is always necessary to determine the purity of the sulphuric acid and zinc; and MM. Danger and Flandin very properly recommend, that we should try these substances in the same quantities as those actually employed in the process. (p. 88.)

We think, therefore, that when common care is taken, the objections of M. Signoret can have no practical force.

M. Coulier states in his letter to the Academy, that stains resembling those of arsenic may be produced on some kinds of glass or porcelain, where the hydrogen is absolutely pure and free from that metal. This is ascribed to the oxide of lead in the glass or glaze being reduced by the gas. We consider this an absurd objection: out of many hundreds of experiments, we have never seen any result of the kind. The glass or porcelain breaks before any such reducing power is exerted by the hydrogen.

The last plan noticed is that of MM. Köppelin and Kampmann. In this case the arsenuretted hydrogen is made to pass through a horizontal tube filled with the chloride of calcium, so that it is thoroughly dried. Heat is then applied to one part of the tube; and as the gas is easily decomposed at a high temperature, hydrogen passes away, while the metal is deposited in a bright metallic ring or sublimate, at a short distance from the heated spot. Other metals held dissolved by hydrogen are deposited in that portion of the tube to which the heat is directly applied; they are not carried forward like arsenic. The ring of metal may be easily examined, and its arsenical characters determined by the usual reagents. The undecomposed portion of arsenuretted hydrogen may either be burnt as it escapes from the open end of the tube, or may be made to pass into a solution of nitrate of silver, in which case it will be entirely condensed and decomposed. Thus, in this way, every trace of arsenic from the poisoned material may be procured.

There are many advantages about this last process; but we do not see the necessity for drying the gas. A slight inclination of the tube towards the generating vessel, would answer all the purpose of removing any portions of liquid that might be carried over. This gas being highly poisonous, it would be always advisable (where there is no stop-cock to command its escape,) to allow any undecomposed portions to pass into a solution of nitrate of silver. This will guard the operator from risk, and will prevent the loss of any portion of arsenic.

We thus conclude our notice of the work of MM. Danger and Flandin. The matter is both original and good, but we must condemn the total want of arrangement displayed in it. The subject is treated in a most confused manner: their own process is described three times, and their statements are carelessly mixed up with those of the committee appointed to report on the value of their researches. We should recommend the work to be reprinted, and more order observed, so that a reader might not have to search over the whole volume for a complete knowledge of the results which they have obtained. The angry discussions at the Academy should be altogether omitted; these occupy half the volume, and, however interesting to the parties concerned, they are quite out of place in a work professedly devoted to science. We must, however, do the authors the justice to state, that in no part do they show a controversial spirit; they claim no merit for themselves; they leave their views to the judgment of the profession, without assuming that they are perfect or free from fallacy.

We shall now proceed to examine Orfila's report of the proceedings of the committee of the Royal Academy of Medicine. This pamphlet has

been published by Orfila not only as an indication of his views but for the purpose of refuting certain statements made against them by MM. Magendie and Gerdy. The report which professes to be the same as that referred to by MM. Danger and Flandin, differs from that published in their work, in regard to the conclusions drawn by the committee. The differences, however, are not very material, and do not affect substantially the merits of the processes pursued by the two parties.

It will only be necessary for us here to advert to the modification which M. Orfila has made in his processes since our review of his Memoirs on Poisoning. We there examined his views of the characters of arsenical and spurious stains. The committee, as we have seen, have reported that the spurious stains cannot, when produced, be confounded chemically with those resulting from arsenic; but while this is admitted, it may be inferred from their report generally, that it would be better to collect the arsenic in a more tangible form, and test it directly in the usual way. A new kind of apparatus was proposed by M. Orfila to obviate the objection arising from the occasional production of spurious stains. A figure of this is given, for which we must refer to the pamphlet (p. 18); but we may remark it is similar to that of MM. Köppelin and Kampmann, just now described. Instead of using chloride of calcium for drying the gas, M. Orfila introduces a small portion of asbestos into the horizontal tube. This detains any extraneous matter; and when the portion of the tube containing the asbestos is heated, the metallic arsenic is deposited in a distinct ring at a short distance beyond it.

The next material point relates to the process employed by Orfila for the carbonization of animal matter. In our review of his memoirs it was stated, that he gave the preference to the use of nitric acid; but the committee consider that there are many objections to the employment of this agent. In the first place it is requisite to use it in very large quantities, much is lost by evaporation before the animal matter is attacked, there is a large quantity of froth produced, and by this as well as by accidental combustion, which occasionally takes place, the greater portion of the arsenic is dissipated. They allow that arsenic may be in this way detected; but the carbonizing process succeeds better with sulphuric acid or nitrate of potash.

The use of nitre for detecting arsenic in poisoned subjects by incineration, was suggested by Rapp thirty years ago, and it has been used for this purpose by many English and continental chemists since that time. It is not necessary for us to describe Rapp's process; since it has been much improved by Orfila. Orfila's plan, which is considered by the academy to be superior, as a means of carbonization, to that of MM. Danger and Flandin, is very simple. If it be a suspected liquid, we dissolve nitre in it, and evaporate to dryness, so as to ensure a perfect mixture of the salt with the organic matter. If it be a soft organ, as the liver, it is to be bruised and mixed into a paste in a mortar, with nearly double its weight of nitre.* The mass is then dried in a porcelain capsule at a gentle heat. When thoroughly dry, it is projected by small portions into a Hessian crucible, made red hot. The calcined residue ought to be perfectly white: should this not be the case, more nitre must

* We have not found this process of mixing so easy as it is represented to be, when we are operating on the stomach and intestines.

be added, and a fresh calcination made. When cold the saline residue is dissolved out of the crucible by a small quantity of water. If much nitre has been employed a large quantity of water will be employed: the fused nitre adheres closely to the crucible. Concentrated sulphuric acid is added until there is no longer effervescence; the whole of the nitric acid is afterwards expelled by continued boiling; the solution which contains sulphate and arseniate of potash, if arsenic were present, is then introduced into Marsh's apparatus. (p. 32.)

This process is approved of by the committee owing to the very satisfactory nature of the results, but they admit that there are certainly cases in which it would be better to employ sulphuric acid as the carbonizing agent. Thus where the matters analysed are of a fatty nature, combustion might take place with so violent a flame, as to occasion a loss of arsenic. In respect to delicacy the processes are nearly equal, and a good result may be obtained by both. In some instances, the product in arsenic was greater with nitre than with sulphuric acid (p. 34). There is great embarrassment in having a large quantity of sulphate of potash mixed up with the arseniate; and we really do not see why, with some modifications, sulphuric acid might not supersede nitre as the agent. It has the advantage of being a more convenient and speedy means of decomposing organic matter, and the arsenic is ultimately obtained in a pure state. It may be a question, however, whether nitre does not more effectually fix the arsenic in the saline state than sulphuric acid. According to the report of the committee, there seems to be but little difference in this respect.

Orfila seems quite satisfied that the committee have reported that he was the first chemist who detected arsenic in the substance of the animal organs, and that the urinary secretion in animals poisoned by arsenic, is not always suspended, (p. 36;) but we are sorry to see that he wishes to strip MM. Danger and Flandin of all credit for their ingenious process, by assigning the merit of it to another, in our opinion without sufficient grounds (p. 41). He accuses them of inconceivable presumption, condemns their apparatus as complicated, and says what does not appear to us to be the fact, that the committee did not recommend its employment (p. 42). Had this been the case, the authors would hardly have received the thanks of the Academy (p. 37).

There is another point in this memoir which requires especial notice, since Orfila passes it over in a few words; it is that which refers to the presence of arsenic in the bones of the human body. In our former review, we took occasion to denounce this as a startling novelty, and a statement not to be admitted upon the very weak evidence upon which it was based. The analysis of bone by many chemists had not led to the confirmation of Orfila's assertion, but rather tended to negative it. Since our former remarks, Dr. Rees has carefully examined bone in various experiments, the results of which are inserted in a late number of the Guy's Reports. They were such as all chemists might have anticipated, not a trace of arsenic could be discovered. We have already seen from the report made by the committee of the Academy, on the experiments performed before them by MM. Danger and Flandin, that no arsenic could be detected either in bone or any of the organs of the body, of a person who had not taken poison. M. Andonard, a chemist of Beziers, had also

examined bone without finding arsenic. Orfila remarks in a note to the Report: "How is such a contradiction to be explained? In 1839 we obtained from bone stains which were truly arsenical, and which possessed *all the physical and chemical characters* of those produced by arsenic. These results were constant. But in an exact repetition of these processes (before the committee), and employing reagents as pure as those formerly used, we could not extract any arsenic. There is some obscurity here which requires to be cleared up." (p. 42.)

Orfila affirms that the committee have not denied the *existence* of arsenic as a constituent of bone, they have merely said it was not produced before them. We will give him the benefit of this admission; but in these medico-legal matters, as in those which are purely legal, we would say, "De non existentibus et non apparentibus, eadem est ratio." It would not, we think, be difficult to clear up the obscurity which hangs over this subject, or to account for these discrepant results. We believe that the stains observed by Orfila in examining bone were either those spurious stains which all must have met with in using Marsh's apparatus, or if they really possessed the chemical characters of arsenic, then the arsenic must have been unknowingly introduced during the process, from some residuary portion in the tube, or from impurity in the materials employed. That one or the other of these explanations must be correct appears probable from the fact, that many chemists who have tried Orfila's experiments have not met with like results; and that he himself, in repeating them before the committee, completely failed in reproducing them. It is clear from this that chemical tests cannot be safely relied on when applied to such minute portions of matter as must have existed in the stains said to have been procured from bone by Orfila.

After this report, what becomes of the arsenic which is stated to exist in the soil of most cemeteries—and the origin of which was ascribed to decomposed bone? MM. Danger and Flandin have shown that stains thus procured were not really of an arsenical nature; and certainly the explanation of the origin of the supposed arsenic falls to the ground. These announcements of Orfila tended at the time to shake the foundation of all medical evidence in cases of arsenical poisoning; and we must congratulate medical jurists upon their having been clearly proved to be erroneous. We had anticipated this result in our former remarks on Orfila's memoirs. This fact shows, perhaps as strikingly as any other we can adduce, the dangerous inferences into which an experienced man may be led by relying too strongly on tests applied to minute stains produced from unknown substances.

We can hardly look upon this report as a separate work of Orfila's: it is rather a defence of his opinions against the many attacks made upon them. Some of these attacks were trivial and absurd, and Orfila would have acted wisely in leaving them unnoticed. Other objections to his views, involving matters of high practical importance, he has not discussed with that calmness which we should have expected from a man of his experience and sagacity. It is no disgrace to a deservedly celebrated man to have fallen into an error; but it is to be regretted that he should be disposed to persist in it even against evidence, which, on other subjects in which he was less personally concerned, he would not hesitate to admit. The reputation of Orfila will live as long as legal medicine shall be known

or studied; and it would be to us a matter of regret if our remarks should be supposed to weigh heavily on a man who has by his indefatigable perseverance and extensive knowledge earned so noble a reputation in medico-legal science. Our observations have been directed not against him, but against opinions which, it seemed to us, might if unnoticed, lead to pernicious consequences.

We do not consider it necessary to lengthen this article by any additional remarks on the last two works in the list. The Memoir on Poisoning extracted from the Memoirs of the Royal Academy of Medicine, gives a short history of the several cases of poisoning by arsenic, in which the evidence of Orfila has been received and acted on by courts of law, in relation to the presence of arsenic in the organic tissues of the body. Among these is the well-known case of Madame Laffarge. They will be perused with some interest by the medical jurist, more especially, since this kind of evidence of the presence of poison in the organs of the dead, has never yet been offered to an English court of law. It is unnecessary to refer to the plans adopted by Orfila to detect poison in these cases, since he has now in some measure laid them aside; and we have already noticed in this article his improvements to a much later date than that to which these cases refer.

The work of M. Beaufort is a mere reprint of the different memoirs of Orfila on the subject of arsenical poisoning. A large portion of the work is occupied by the report of the Academy, already noticed. We find nothing new in the shape of comment or experiment; and it would be impossible to make an extract from any portion of it without recapitulating matters already fully examined in this and our former review. To those who wish to have a compilation of Orfila's labours in a small space, we can recommend this work of Dr. Beaufort's. The compiler is, however, evidently a partisan; and his opinions of the relative merits of the process of Orfila and others, must therefore be taken with some limitation.

Art. XI.

Treatise on the Oleum Jecoris Aselli, or Cod Liver Oil, as a therapeutic agent in certain forms of Gout, Rheumatism, and Scrofula; with Cases. By John Hughes Bennett, m.d., &c.—*London*, 1841. 8vo, pp. 180.

We are a little surprised that any one whose aim is the promotion of medical science, which we believe to be that of the author of this treatise, not mere personal notoriety, should take such pains in introducing to the notice of his brethren any *single* therapeutic agent; how useful soever that agent may have appeared to him. We think that from so respectable an authority as Dr. Bennett, a simple intimation in any of the journals that he had found cod-liver oil useful in such and such cases, and had witnessed its successful employment in Germany, would have secured all practical ends. The author has not even the excuse of having to deal with an agent of delicate use or dangerous application, in regard to which minute details might be justifiable. On the contrary, from Dr. Bennett's own showing, cod-liver oil belongs to a class of remedies of such equivo-

cal powers, as might have almost justified the use of the term "dietetic" instead of "therapeutic" in the title-page of his book. At p. 42, he tells us that "The Laplanders, and the inhabitants of some northern nations, take it habitually, and consider it a delicacy. Even in Shetland (he says), I am informed by Dr. Edmonstone, that it is used extensively, when fresh, as an article of diet, instead of butter, and that it is universally considered both palatable and wholesome." At p. 61, we are told that Brefeld has seen the peasants swallow from half a pint to a pint of it, at a time. Surely an article which may be used so freely and continuously may claim a dietetic reputation.

In an Historical Introduction, Dr. Bennett informs us that the oil has been used immemorially in some of the northern nations as a cure for rheumatism. In Holland, it had long been employed by the vulgar in rachitic cases, before its virtues had been recognized by medical men. Dr. Bennett has heard that it is still employed in Scotland in rheumatic cases. Dr. Kay, of Manchester, employed it with success in the Infirmary of Manchester in 1789; and Dr. Bardsley previously to 1807. Dr. Shenk's papers in Hufeland's Journal, which were published in 1822 and 1826, led to its general use in Germany. And of late years it has been employed in Belgium and France, and partially in this country.

In the first section, in which "The natural and commercial history of cod-liver oil" is narrated, there is exceedingly little to detain us. We are informed that the oil is obtained from several species of gadus. The various processes of procuring the oil are detailed; but Dr. Bennett is not prepared to prefer any particular one. (p. 27.)

The second section treats of "The physical and chemical properties" of the oil. The purified sort obtained by Mr. Donovan, who has experimented for this purpose, has a specific gravity 0·934; is of a pale yellow colour, and the taste resembles "that of a cod boiled for the table, when in excellent condition." We shall by and by see that this is a much too favorable account of its saporous qualities; and we may here observe that the darker coloured oil is more richly replenished than the lighter, with that peculiar principle or ingredient, to which, as will presently appear, cod-liver oil owes such therapeutic properties as it possesses.

The results, in a tabular form, of one or two chemical analyses of the oil, are given at pp. 31-2-3; connected with which the most material and practical point is, that the oil has been found to contain iodine. Its therapeutic action, we are told, led Dr. Kopp to suspect the presence of iodine; and his shrewd conjecture was verified by De l'Orme. The results of two trials are stated, from which it appears that in one 0·324, in the other 0·162 per cent. of iodine was found in 100 parts of oil.

In section third, the "Action of cod-liver oil on the human economy" is described. Its sensible effects seem vague or null. Thus it is mentioned (p. 45) that "some practitioners have noticed an increased number of stools to follow its employment; but Brefeld states that although diarrhœa may occur during the use of the oil . . . . . the oil is not the cause of it." Professor Romberg has found it act as an astringent. Dr. Bennett endeavours to reconcile these apparent discrepancies by remarking that diarrhœa may depend in different cases on different causes.

The following were the effects of the administration of the oil in seventy-one cases:

"*Stomach.* Nausea was observed in three cases; vomiting, also, in three cases; in one case loss of appetite, and sensation of ardor in the stomach; the voracious appetite often observed in rachitic children was diminished; in one case cure of fetid breath.

"*Intestinal canal.* A greater or less increase in the alvine evacuation in seventeen cases.

"*Urinary apparatus.* Cure of incontinence of urine in two cases; acceleration of the urinary secretion, with a bricky sediment, in eight cases.

"*Generative apparatus.* Increase of the menstrual evacuation, so strong as to render a suspension of the oil necessary. The same phenomenon was observed to repeat itself several times on the oil being again given; in one case re-establishment of the menses.

"*Integumentary system.* Increased diaphoresis in twelve cases; in one of these the perspiration was only observed on the inferior extremities; in two others it had the odour of the oil; in three cases it was preceded by a heat over the whole body; in another the body was cold; in one case there was a burning tingling of the skin; in two cases an eruption of small red spots with itching; in the last cases a cure was not obtained.

"In a great number of cases the pains were more or less increased by the first doses of the medicine." (p. 47.)

If we add together the cases in which the effects are stated, they appear to amount to forty-three. Thus the result in a considerable proportion of the seventy-one cases may be presumed to have been either indeterminate or unsatisfactory; the oil either proving totally inert, or else causing symptoms which led to its early suspension.

It is Dr. Bennett's opinion that it is to the iodine that the oil owes its efficacy in scrofula. In reply to the objection that the oil contains only $\frac{1}{4000}$ part of this substance, as Falker asserts, and that therefore the presence of iodine in so minute a quantity cannot account for the curative properties of the oil, Dr. Bennett urges among other things that "iodine thus occurring in a natural production may be supposed to possess a stronger therapeutic action than when obtained by chemical means," and (p. 52) Falker ascribes the therapeutic efficacy of the oil to its gum resin.

Pages 53-60 inclusive are occupied with an exposition of the views of Dr. Ascherson, of Berlin, as regards the morphology of scrofula, and the therapeutic action of the oil in correcting the strumous diathesis. These views are certainly not devoid of ingenuity and intellect, although, as yet, they must be regarded as wholly or in great part hypothetical, and requiring ample verification.

As regards the doses of the oil and the length of time during which it must be employed, we find that it is best given in quantities of from half an ounce to four ounces, either separately or in one dose, daily. Its use must be continued "a month at least, often six months, and sometimes for years." (p. 50.)

It is always an advantage both to patient and physician, that a drug should be as agreeable as possible. Dr. Bennett would persuade us that the character of the oil, in this respect, is not so bad as has been represented; but his own very equivocal comparison will, with many, establish the very opposite conclusion to that he intended. "For my part," he remarks, "I do not think it more disagreeable to take than castor oil"! Dr. Rust ominously directs (p. 62), that "when the patient swallows the oil, he should shut his eyes, and compress both nostrils

with his fingers;" and Brefeld observes (p. 63) that the oil "is certainly not calculated for luxurious or imaginative females." "One medical gentleman of eminence in the profession informed me," says Dr. Bennett, "that he would rather die than take the first dose." (p. 64.) Nevertheless, if the oil be really very useful, its odorous and saporous qualities, however atrocious, will not be an insuperable objection: for we agree with Brefeld that "when it is necessary, the patient will little trouble himself about what will do him good," (p. 63,) and with Dr. Bennett's simply expressed belief that "it is probable that the majority of my countrymen, as well as individuals [!] on the continent will swallow any substance which holds out the hopes of cure, after having suffered a few years from protracted rheumatism or gout."

The diseases which, it is asserted, oleum jecoris aselli is capable of curing are various and grave. These are, rheumatism and gout; scrofula; rachitis; malacosteon; scrofulous caries of the bones; atrophia mesenterica; phthisis pulmonalis; chronic skin diseases; scrofulous ulcers; scrofulous diseases of the eye; and other scrofulous diseases. It is but justice to Dr. Bennett to state that he seems (p. 48) to attribute the success of the oil in most or in all of these cases to the power of the iodine in correcting the scrofulous diathesis, the connexion with and dependence of these "cachectic diseases" with scrofula being assumed. And hence he accounts (p. 48) for the oil having produced good effects in a variety of cases which at first appear opposite to each other. We have also to add, that Dr. Bennett advises an accurate diagnosis as to whether the case be really of a nature proper for treatment by the cod-liver oil; since this substance, though effectual against rheumatism and scrofula, and also, as Dr. Bennett thinks, against gout, (which Brefeld denies,) is inert against neuralgia, an affection which may, in some cases, be confounded with rheumatism or gout. Care must therefore be taken that the oil may not be unjustly charged with failure, from being mistakenly applied to cases not really such as it is adapted and designed for.

Following the author's own plan, we now pass to the cases, respecting which we would make one general observation: namely, that Dr. Bennett's clinical notices of the particular operation of the oil, are in the greatest degree meager and vague. In the first place, scarcely in one instance are the state and appearance of the excretions either previously or subsequently to the administration of the oil recorded; nor what effect, if any, the oil had upon these. The effects of the medicine are, in the majority of the cases, stated in the same unsatisfactory, we might say, unprofessional style, as the following, (p. 81:) "Some bottles of the oil cured the girl so completely that not a trace of the affection remained, and it has never returned." This deficiency we regard as deducting greatly from the value and practical utility of Dr. Bennett's cases. It is not our intention to go over these cases. There is nothing in Dr. Bennett's mode of detailing them, to make it useful or necessary to do so. While the reader of our pages will lose nothing by this omission, Dr. Bennett will probably think that we fulfil the principal object when we state that radical cure or palpable amelioration, even in the serious cases already enumerated, evinced the therapeutic efficacy of cod-liver oil. We shall not curiously enquire how far the improvement in many of these cases was attributable to the treatment which they had been under prior to the

trial of the oil. The meagerness of Dr. Bennett's details precludes us from instituting fairly such an enquiry. All that we can do therefore, is to inform the reader that vomicæ and caverns of the lungs have been, according to the author, cured by the ol. jecoris aselli. We ought to have quoted ere this, Dr. Bennett's theory of the *modus operandi* of this oil, which is as follows:

"The *modus operandi* of the oil may be said to consist in stimulating the lymphatic glands and vessels, and by these means increasing the activity of the capillary system. By its action on the former the process of assimilation is facilitated, and the appetite increased. The quality of the blood is thus improved, and so lastly the different organs and structures of the body become better nourished, and receive more *turgor vitalis.*" (pp. 50-1.)

We shall conclude with quoting directions as to the cautions to be observed during the administration of the oil; and we cannot help, at the same time, expressing our fears that the oleum jecoris aselli will prove far from equal to the expectations which Dr. Bennett's treatise is likely to excite in its favour.

"1. *The diagnosis*, which must be correct, not only as regards the disease, but as regards its form.

"2. *The constitution.* The flaccid and phlegmatic bear it best, and the plethoric worst. In scrofula with torpidity it is directly indicated. If irritation be present, however, its employment requires management and great care.

"3. *The contra-indications.* These are plethora, a disposition to inflammation, profuse menstrual or hemorrhoidal discharges, total loss of appetite, nausea and vomiting, pain in the abdomen, and diarrhœa dependent on disease in the intestinal walls.

"4. *The time of administration.* It should not be given in the morning fasting, and its employment is not advisable during epidemics of dysentery or diarrhœa.

"5. *The quality of the oil.* The best is the clear brown or reddish variety, next in power is the yellow, and the least beneficial is the white. A sample of the oil employed should always be analysed, in order to determine whether it contain iodine as a constituent.

"6. *The dose.* In adults it should be gradually increased to a strong dose, such as six table-spoonfuls; in children a smaller dose, proportionate to the age.

"7. *The diet.* A fat animal diet supports the action of the oil. All substances abounding in starch are to be avoided.

"8. *The conjoined treatment.* Sometimes it is necessary to give aromatics and bitter tonics, and in numerous instances, especial medicines are required, according to the nature of the case. Not unfrequently a course of chalybeate waters has been found useful.

"9. *The duration of the treatment.* In every case it is necessary to give it a sufficient length of time. The chronic diseases in which it is beneficial can only yield slowly. In this respect the practitioner must be guided by its effects on the constitution.

"10. *The judicious suspension of its use.* 1st, Should it occasion derangement of the digestive organs, diarrhœa, increased flow of the menses, &c.; and, 2dly, after its employment has been continued five or six months. In this last case it should be suspended two or three weeks, and bitter or ferruginous tonics given, according to circumstances, to support the tone of the stomach." (pp. 174-5.)

ART. XII.

A New Synopsis, or the Natural Order of Diseases: containing their Definition, Principles, and Treatment, with a New Pathology of Fever and Inflammation. By ROBERT STEVENS, M.R.C.S. &c.—*London,* 1841. 8vo, pp. 175.

IN the introduction to this work, the author informs us that the principles of pathology and therapeutics are based on certain very simple laws, easily comprehensible to one who has a sufficient knowledge of anatomy and physiology; and at another place he affirms that "the first laws of practical medicine are as true and immutable as the rules of geometry, and are equally susceptible of demonstration." (p. 161.) Such being his opinion, he concedes less importance to the "details" and "incidental complications" of disease than is usual with practical writers. Yet, at p. 161, he says "the general rules of practical medicine, as far as they can be specified, are well known; but there are other points of far greater practical importance, which cannot be taught; they constitute the art or skill in medicine, and depend upon natural ingenuity solely." Now, we cannot exactly perceive on what the "natural ingenuity" is to be exercised, unless it be on the "details" and "incidental complications," seeing that the mastery of the general rules is a matter of *knowledge*, not of skill or ingenuity. Howsoever all this may be, we beg to say that if Mr. Stevens will indicate the immutable laws of medicine to which he alludes, we shall be exceedingly thankful, and he shall be unto us a "Magnus Apollo;" for we have always been accustomed to think that medicine is, of all sciences, the one least reducible to fixed laws.

Passing over other introductory matters, the first subject that presents itself is *the pathology of fever.* Our author makes some observations on the source of animal heat, and concludes in favour of the hypothesis which refers it to the chemical changes attendant on the conversion of arterial into venous blood, taking place in the capillaries during the process of assimilation throughout the body; he maintains further, that the circulation of the blood and the calorific process going on in the capillaries are under the control of the ganglial system of nerves. The opinion that animal heat has its origin in the changes which the blood undergoes in the capillary vessels is, perhaps on the whole, the most probable that has yet been advanced on the subject. With respect to the influence of the ganglial nerves on the calorific, or any other process carried on in the capillaries, we must repeat what we have said on a former occasion, that it is a point on which physiology calls for the aid of minute anatomy. It is quite futile to speculate on the influence of these nerves on the extreme blood-vessels, till we know whether they are actually distributed to them, which is hitherto ascertained only with reference to the arteries of particular parts of the body. On these data, which, we presume, he considers as certain as anything in geometry, Mr. Stevens founds a theory of fever. His exposition not being particularly lucid, we will not incur the risk of misinterpretation, but let him speak for himself.

"In fever the ganglial nervous power is augmented, as well as not only nu-

trition, but also the counterpart absorption and redigestion or decomposition of the old material; and as there is deficient appetite, the system is thus left to prey upon itself, the excitement called fever soon merging by exhaustion into a typhoid form. So fever exists not only where the vital actions are excited by the augmented circulation of good arterial blood, but also where the system has preyed upon itself, even where prostration and debility are induced. Hence the typhoid form, and though no definition can well explain both these opposite modifications of fever, yet their separate existence as different states of the same morbid action is perfectly intelligible. For when febrile action is continued, not only is there a quicker expending of the nutritious particles of the blood, but also the counterpart absorption of old material is equally augmented, the nutritious materials being so quickly worked and expended, that shortly there is no longer the proper stimulus for the nervous centres, namely, good arterial blood, and therefore the vitality is depressed, and the patient in a state of low typhus, the circulating fluids being attenuated and the general fibre relaxed, purpura supervening and a tendency to decomposition." (p. 26.)

It would be easy to state many objections to this theory, but there is one so obvious and conclusive that it alone may suffice. Admitting Mr. Stevens's view to apply in the case of common continued fever, where typhoid symptoms occur only in the advanced stage, it affords no explanation of those severer forms of fever in which the circulation is depressed and the surface cool from the commencement; yet these are the very cases to which a true theory of fever ought to apply most exactly; because they exhibit the disease in its most essential form, as produced by the most concentrated operation of its causes. We fear, therefore, that Mr. Stevens's theory must share the fate of various similar products of human ingenuity.

We next encounter *the pathology of inflammation*, of which our author's view is briefly this. Inflammation is an affection of a part resembling that which obtains throughout the system in fever, in as far as there is, in both cases, augmented circulation and heat: but in fever, the assimilation is no otherwise altered than in the increased rate of action, deposition and absorption going on more rapidly than in health; while, in inflammation, we have not only augmented circulation and heat in the part affected, but also anormal deposits, as coagulating lymph, pus, &c., with a new action of the absorbents. There is doubtless truth, though no novelty, in the notion that the phenomena of inflammation may be greatly affected by the mechanical and other influences of its own products. We do not think, however, that our author is very happy in his illustrations of the modus operandi of such causes. The following, we should say, was precisely in the worst style of Magendie. Mr. Stevens observes that "if excitement take place from irritation or other causes, we have an increase of secretion; but if obstruction take place from excitement, or any cause such as the error loci of the corpuscular pathologists, we have the ulcerative inflammation, and effusion of lymph," &c. (p. 43.) He adds, in a note, "The following simple experiment may illustrate this obstruction from excitement: If a quantity of sand, not too fine or dry, be put into a glass or other funnel, it will gradually fall through the pipe, unless pressure be made on the upper surface of the sand, when it will cease to fall through, the particles becoming packed at the bottom of the funnel." Is this written gravely, or is it a quiz on the "phénomènes physiques de la vie?"

We must now notice the *nosology*, although we have elsewhere expressed our belief that, whatever may be the utility of detached nosological groups, all attempts at a general systematic arrangement of diseases should be abandoned, as tending to connect them only by relations which are false or useless. We speak of course with reference to the actual state of knowledge, and pretend not to determine what rank nosology may hereafter hold among the medical sciences.

Mr. Stevens arranges all diseases under the two primary divisions of *sthenic* and *asthenic*. He maintains that there is not a single genus in Cullen's second and fourth classes (*neuroses* and *locales*) that might not be transferred into his first and third (*pyrexiæ* and *cachexiæ*), or into the *sthenic* and *asthenic* divisions of Mr. Stevens's system.

This has accordingly been done in the nosology before us, Cullen's classes being reduced from four to two, and his orders from twenty to eighteen. The orders of Mr. Stevens's system are nine in each class, and are arranged in contrasting pairs, each genus of sthenic disease having its asthenic analogue. The classes and orders, then, stand thus:

Class I. Sthenicæ.	Class II. Asthenicæ.
Order 1. Febres.	Order 1. Marcores.
2. Phlegmasiæ.	2. Adynamiæ.
3. Eruptiones.	3. Cachexiæ.
4. Impetigines.	4. Parasiticæ.
5. Tumores.	5. Ectopiæ.
6. Hæmorrhagiæ.	6. Profluviæ.
7. Spasmi.	7. Dyscinesiæ.
8. Dyosorexiæ.	8. Dysæsthesiæ.
9. Vesaniæ.	9. Dementiæ.

It must be admitted that Cullen's class of *locales* is very badly constructed, and Mr. Stevens has, we think, done well in rejecting it; but we do not see how any nosology can get on without a class of *neuroses*, for purely nervous diseases appear to be associated more naturally, and on plainer grounds than any others, inasmuch as they manifest their principal effects on one system only, while other diseases more or less implicate all the systems. For example, *idopathic epilepsy* is considered by every one as a nervous disease, there is no dispute about it; but *typhus* which implicates every system and function, is considered by some as a nervous disease, by others as an inflammatory disease, and by others as a disease of the blood.

We do not think we should be occupying our time profitably to the reader in analysing Mr. Stevens's nosology. In common with all others, several of its genera hold certain places for reasons doubtless satisfactory to the author, but inscrutable to every one else. For example, Cullen places *fractura* and *tinea* under the same order, *dyalyses:* a broken thigh and a scald-head have certainly a wonderful affinity, but surely not more than *icterus* and *necrosis*, which Mr. Stevens has brought together under the order *adynamiæ*.

If Mr. Stevens has failed in framing a nosology, it must be allowed that nobody has succeeded much better; but there is one thing, unconnected entirely with the subject of classification, which we cannot let pass. No one should think of publishing a nosology who does not pos-

sess a sufficient knowledge of the classical languages from which the terms of the science are adopted or derived.

If Mr. Stevens had possessed such knowledge, he never could have latinized καταῤῥας by *catarrha*, nor βουλιμια by *bulimea*, nor φθισις by *phthysis*; nor could he have designated *toothach* by such a term as *ondontalgitis*, which would signify "inflammation of a toothach." These are not errors of the press, for they are reiterated in different parts of the book.

Mr. Stevens has attempted a sort of compendium of treatment, in conjunction with the definitions of diseases. We do not conceive that such an object could be very successfully accomplished, but the thing might certainly be better done than it is here. Look, for example, at the treatment of *erysipelas*:

"Reduce the inflammation on general principles; by the use of saline purgatives and the emetic tartar; by evaporating lotions; by cutaneous incisions, which empty the vessels and relieve the tension." (p. 54.)

Suppose that a student, taking Mr. Stevens's book for his guide, were to give emetic tartar in a case of typhoid erysipelas, what would be the probable result?

There is an appendix to the nosology treating of "symptomatic affections;" and an appendix to the whole book "on medical practice and medical science." These we have not space to notice, and, were it otherwise, the less perhaps that was said about them the better. From Mr. Stevens's affirmation that "really scientific men are successful in almost all cases submitted to their care, perhaps only excepting cases of phthysis and malignant diseases of structure," we are led to infer that he must be a wonderfully successful practitioner; in which case we would recommend him to lay aside the pen, for authorship is not his *forte*.

Art. XIII.

Pathology founded on the Natural System of Anatomy and Physiology; a Philosophical Sketch, &c. By Alexander Walker. Second Edition.—*London*, 1841. 8vo, pp. 162.

Mr. Walker is doubtless an ingenious and subtle thinker, and if he had any purely abstract subject to deal with, he might prove a very seductive reasoner, and one by no means easy to confute. In such abstract subjects, the chief end of argument is to apply generally-acknowledged principles to the solution of particular questions. In the physical sciences, on the contrary, we have yet arrived at few general principles, and the great object is to enlarge their number by the accumulation and comparison of facts. Now it unfortunately happens that the great difficulty of ascertaining facts in physical science renders their accumulation a very tardy process; and hence men of a lively genius are apt to educe what they call general principles from very partial induction, and when they come to apply them to the solution of a question, they are apt to overlook all facts opposed to principles which they think universal, because they have an all-pervading influence on their own minds. We fear that Mr. Walker belongs to this class of philosophers; for it appears to us that there are very few positions in the argumentative and really clever

production before us, that might not be upset by a reference to the most familiar facts. There is one feature in this work of which we entirely approve, namely, that the author, after the manner of many excellent French writers, has given a recapitulation of the conclusions at which he has arrived. This proceeding is to be commended, *first*, because it shows that the author understands his own meaning, which is not the case with all authors; and *secondly*, because it shows that he is not afraid to subject his disrobed opinions to the criticism of the world, thereby affording a strong presumption that he himself believes what he says, which also is far from being universal among authors. As reviewers, moreover, we have reason to applaud this proceeding, because it saves us a great deal of trouble: we beg, however, to assure Mr. Walker that in availing ourselves of his "summary" we have by no means neglected the task of reading, with minute attention, every syllable of his work, the chief contents of which we will now proceed to analyse.

1. Anatomy is the basis of physiology, and physiology the basis of pathology: this being admitted, a classification which places the objects of anatomy in a true and natural relation to one another, will apply in like manner to the objects of physiology and pathology.

According to Mr. Walker's method, anatomy is distinguished into three parts: that which regards the locomotive organs; that which regards the vital or nutritive organs; and that which regards the mental or thinking organs. In order to classify the objects of animal physiology, it is only necessary to substitute the term "functions" for that of "organs," and this department of science resolves itself into the consideration of the locomotive, nutritive, and mental functions. In pathology, again, we have merely to substitute "diseased functions" for "healthy functions," and we have three classes, embracing diseases of the locomotive functions, of the vitalor nutritive functions, and of the mental or thinking functions.

In the abstract, we see no particular objection to this arrangement; yet, we imagine, every one but Mr. Walker will at once perceive that it is entirely inapplicable to the present state of knowledge, and that its adoption would immediately bring medicine to a dead stand; since it would imply that our science must be utterly irrational, and unavailable, unless when founded on a perfect knowledge of the structure and functions of the animal body, to which physicians have certainly not yet attained, and to which we think it probable they never will attain. We admit freely that our aim should always be to connect medicine as closely as possible with anatomy and physiology, but if we were to reject every pathological view, and every therapeutical indication, which could not be made to square with our author's arrangement, or any other of the like nature, we apprehend that nineteen twentieths of our present supposed knowledge would be brought to nought. Moreover it seems to us not a little extraordinary that Mr. Walker should insist so rigidly on such an arrangement, because, as we shall presently find, his *therapeutics* are based on two very broad principles, one of which, namely, *similia similibus curentur*, has no appreciable relation to anatomy or physiology, or any pathological doctrine derived from them, but, (in as far as its truth extends) rests upon experience alone.

It would have been well if our author had given us a few practical examples of pathological views founded immediately on the functions, and

thence on the structure of parts; though we must confess that if all his notions on physiology be as hypothetical as those contained in the following extract, we think medicine had better be allowed to remain on its present avowedly and imperfect heterogeneous basis.

"Under the vital or nutritive organs, I class, first, the lacteals, fine tubular vessels which absorb nutritious matter from the food taken into the intestines, and carry it towards the heart, to be converted into blood; second, the blood-vessels, which circulate the blood thus formed; and third, the glands and other parts which secrete or deposit not only the substances composing the organs, but the various animal products; all of these organs consisting of *tubes* which exercise only a minute peristaltic or *pulsating motion*, and of which the trunk of the body is the centre and principal seat. Under the mental or thinking organs, I class, first, the organs of sense, the eye, ear, &c., which receive impressions from external bodies; second, the brain, which perceives, compares, reflects, &c.; and, third, the cerebel or little brain situated below the back part of the greater brain and above the neck, which wills and consequently throws the muscles into those actions which fulfil its purposes; all these organs consisting of *tubules* and *fibres* in which *no motion* is *visible*, and which occupy chiefly the head." (p. 13.)

We should be glad to know where Mr. Walker learned that the tubes which constitute a gland exercise a *peristaltic or pulsating* motion? Did he ever see the tubes at work? The use of the word "or," and the italics in the above extract, would seem to imply that it is immaterial whether the motion be of the peristaltic or of the pulsatory kind. Now, with respect to the motion best adapted to the function of the glands, we must profess our entire ignorance; but of the general convertibility of these two kinds of motion for the performance of vital functions, we have such serious misgiving that we should be not a little alarmed at the prospect of our intestinal tube assuming a *pulsatory*, and our heart a *peristaltic* action. Again, though Mr. Walker's researches may have satisfied him that the cerebellum *wills*, we imagine that physiologists in general will not be disposed to admit his *opinion*, for such merely it is, as affording the solution of a question on which so much experimental research has been spent in vain. Reil and Rolando say, that the cerebellum is a galvanic pile, or something very similar, and that it generates the nervous energy; Flourens says, it is the combiner and regulator of the voluntary movements; Gall says, it is the organ of sexual desire; Mr. Walker says it is the organ of the will; and we protest that we have not the remotest idea what its function may be. Is it on such conjectural grounds as these that Mr. Walker would found his "natural system of medicine?" We can assure him that it is difficult enough to bring the actual truths of anatomy and physiology into the relations with medicine, which are so much to be desired; but if the subject is to be mystified by mere conjectures in these sciences, medicine must soon become as "the baseless fabric of a vision."

2. In every disease there are two kinds of symptoms, *morbid* and *curative;* the former being the signs of the disease, and the latter of the reaction which nature establishes in order to get rid of the disease: these two kinds of symptoms are therefore directly opposed to each other. Mr. Walker conceives that the contentions of the *Heteropathists* and *Homœopathists*, and the errors into which both have fallen, are attributable to the ignorance which has hitherto prevailed of the foregoing distinction of

symptoms into *morbid* and *curative*. He believes that he is the first writer who has clearly stated this distinction, as universally applicable to the phenomena of disease. We grant that he may have stated it in a more emphatic and aphoristic manner than has been done before; but we maintain that the distinction did nevertheless virtually pervade the pathology and practice of the Greek school, and has been tacitly recognized by almost all their successors.

We presume Mr. Walker is too philosophical a man to stickle about terms, and we can assure him that his "curative symptoms" were very clearly indicated by Galen under the name of *εργα—operations*. We select a passage near the end of the book *περι αιτιων συμπτωματων*, which will, we hope, sufficiently justify our assertion. We translate it as literally as possible from the Greek text:

"But particular attention should here be given to discriminate accurately between *symptoms*, and the *operations of the living frame;* for they often resemble each other so closely, that a *symptom* may be mistaken for an *operation*, and an *operation* for a *symptom*. And unless any one be of a sound judgment in this matter, he will misrepresent our arguments through his own mistakes. For, if he propose as a standard, the quantity, or quality, or kind, of the natural excretions (so those are called which occur in healthy persons), and, contemplating these, judge thence with respect to symptoms, he will be oftentimes deceived; since a sweat, or alvine discharge, or flow of urine, much more profuse than natural, sometimes occurs in sick persons, not only without lesion of any action, but through the power and providence of the living frame; for some things, even though they may be altogether preternatural, as flow of blood from the nostrils, or vomiting, or purging of blood, or hemorrhois, or anything else of the kind, are yet not contrary to nature if they occur seasonably, and *they are evidently seasonable when that which aggrieves the system is expelled*. Keeping therefore to what we stated at the commencement, that symptoms are lesions of actions, *none of those things which aid the system belong to this kind of symptoms, for each of them seems rather an operation of nature than any sort of lesion.*" (GALEN. ed. Basil. tom. iii. p. 218.)

It may be said that this notion of Galen's related only to critical evacuations, and therefore cannot be considered as of general application; but it is to be remembered that he followed Hippocrates, in referring all diseases to excess, diminution, depravation, or wrong direction of the humours, and hence that a discharge of the offending humour entered very largely into his ideas of curative processes whether natural or artificial.

3. According to Mr. Walker there is a very simple criterion for the *discrimination* of *morbid* and *curative* symptoms; namely, the presence or absence of *pain*.

"Pain," he says, "is an act of the nervous system, the outcry of life when suffering under morbid symptoms, and the portion of the vis medicatrix naturæ exciting to the production of curative symptoms. Pain is therefore *the means of distinguishing morbid from curative symptoms*. Gentle reaction, slight injection, or incipient inflammation, is the consequence of pain, the reaction of the vital system, the instrument of the *vis medicatrix naturæ, in the cure of the disease*. Medicines being perfectly simple, and their power being determined by their effects on persons in health, as well as in disease, their administration will follow as far as possible the order of phenomena. Where the cause and morbid symptoms can at once be removed, the law *contraria* will be acted upon, as in taking a thorn from the flesh, adding an alkaline antidote to a metallic poison, &c., and

the law *similia* may not be acted upon at all. Where the morbid and curative symptoms follow in successive stages, the morbid symptoms will first be attacked by the law contraria, and then the curative will be guided by the law similia, as in the cold and the hot fit of fever. Where the same medicament at once attacks the morbid, and aids the curative symptoms, both laws will at once be acted upon, as by at once removing the irritating matter and aiding the ejection in diarrhœa. Thus the law contraria may be acted upon singly, or both laws in succession, or both laws at the same time and by a single medicament. The *doses* of medicines ought to be regulated by their intended application to the morbid or to the curative symptoms respectively." (pp. 157-8.)

If all this were correct, it would amount simply to the most important discovery ever made in practical medicine; but five minutes' attention to the most familiar phenomena of disease will suffice to show the insufficiency of Mr. Walker's criterion. For example, when the painful symptoms of inflammation of the brain subside into the state of profound coma, there is a cessation of suffering; but would any practitioner thence infer a curative effort of nature? or would he not, on the contrary, infer the probability of a speedily fatal termination? Again, in a case of puerperal peritonitis, would the cessation of pain, accompanied with increased tumefaction of the abdomen and sinking of the pulse, lead the practitioner to hope that nature was making a curative effort, or would it not rather indicate the approaching dissolution of the patient? A hundred other instances of the same kind present themselves as we pass in review any catalogue of diseases. Take the example of a boil. Here an exceedingly painful kind of inflammation is set up by the *vis medicatrix* to get rid of the dead core, and this is succeeded by suppuration, which increases the torment sevenfold till the skin gives way: immediate relief then follows. Now we submit that these painful actions are nevertheless curative ones. Lastly, when the vitality of the ovum is destroyed at an early period of gestation, are the painful contractions of the uterus, by which it is expelled, *morbid* or *curative?*—surely the latter. The presence of pain, then, is no proof that actions may not be of a curative kind, or that they are what our author calls *morbid.* It would be wasting our own time and that of our practical readers to multiply such examples. All we can say of Mr. Walker's criterion is, that we most heartily wish it were true, but are *painfully* convinced by facts that it is otherwise.

From his reasoning on the nature of symptoms, our author concludes that the laws "*contraria contrariis*" and "*similia similibus*" are each applicable to the treatment of disease; that *homœopathy* and *heteropathy* have both a foundation in truth, but that the kind of cases to which they are respectively applicable have not been duly discriminated, and can be so only through the distinction of morbid and curative symptoms.

After giving a much fuller consideration than they are worth to the whims and contradictions of the homœopathists, some of whom he refers to the *Organon* of their grand master for better information concerning the principles they profess, Mr. Walker proceeds to deliver what he thinks the true explanation of the manner in which the so-called homœopathic doses really operate in the cure of disease:

"It may be said that these hypotheses [such namely, as attempt to explain the operation of the homœopathic remedies] are of little consequence. If,

however, they had not been felt to be otherwise, they never would have been formed or adopted. The object of such hypotheses is the highly important one of rationally explaining the basis of the law 'Similia similibus curantur'—of showing that it is in harmony with natural phenomena and philosophical reasoning. Unexplained by some hypothesis, the rule itself becomes a mere vague hypothesis, instead of a rational theory; and its advocates assuredly desire to raise it above that condition. I think, indeed, that the true explanation of the action of this law can be given, retaining all its experimental and practical worth, its essential part, and reasoning justly respecting it, while we rectify its language. The reasoning, moreover, which is now to be supplied, is amongst the very simplest and most indisputable in physiology. It has indeed been implied in many of the preceding arguments. As then, the common practice is founded chiefly on a consideration of the morbid symptoms and the maxim 'contraria contrariis curantur;' so is homœopathy founded on a consideration of the curative symptoms and the maxim 'similia similibus curantur.' Its medicines may be said indirectly to act *contrarily* to the *morbid symptoms*—the derangement or disease; but their direct action is *similar* to that of the *curative symptoms*, which they therefore assist. In these efforts of nature, as already said, it is the vital system which becomes the healing one, as in fever, inflammation, &c., and it is the nervous system of life which indicates locality and calls up reaction, by pain and various disturbance. Homœopathic medicines, therefore, neither produce such reaction, nor any such disease as the above-mentioned hypotheses propose; they merely assist the already existing efforts of nature, the curative symptoms; and thus all complex explanation is at once got rid of. Even minute doses thus require no 'increased sensibility for the action of specific irritants;' their action becomes one of the most simple and natural events—it is in harmony with and comes in aid of the efforts of nature, the curative symptoms—it adds their force to its own—it gives them a power paramount to the morbid symptoms or to disease properly so called."(p.97.)

This is doubtless a most ingenious attempt at explanation, but we wonder much that so acute a man as Mr. Walker should have given himself so much trouble to account for the efficacy of the homœopathic administration of medicines, without previously ascertaining *whether it had any efficacy?* We affirm that it has—at least in the vast majority of cases—none, and that the apparent success of homœopathic practice admits of a simple and satisfactory solution on very different grounds from those assumed by our author.

We fully agree with him that homœopathic practice is followed by very desirable results in a variety of cases, but we entirely deny that such results are attributable to the medicines employed. The cases we conceive would have come to the same fortunate issue, though not a particle of medicine of any kind had been administered. To give a man the millionth of a grain of any known substance, however active, is, to all practical purposes, to give him nothing; and we beg to assure Mr. Walker that there are many cases in which every good practitioner knows that his duty is merely to regulate the diet and habits of the patient, and remain, otherwise, a passive spectator of the cure which nature is accomplishing. In such cases the homœopathic practice, which, as far as medicines are concerned, amounts to no practice at all, will be found to answer remarkably well. In truth, *homœopathy*, viewed through the medium of common sense, becomes synonymous with *la médecine expectante*. We have elsewhere expressed our opinion that this kind of medicine finds too little favour in our own country, and we have no doubt that many a patient is now groaning under the energetic ministrations

of an English doctor, who would thrive much better on millionths of grains; in other words, if he were let alone.

We have now given the fullest consideration which our limits would allow, to the opinions expressed in Mr. Walker's book. It contains many original remarks on various subjects, from which we have derived some edification and much amusement. In common with most theorists, the author attaches too much importance to the theories of others, and assails with mis-spent vigour positions fit only to be laughed at. Thus he quotes Dr. Dickson, of *fallacious* celebrity, just as if he were an authority, and enters into an elaborate confutation of Hahnemann's spiritualization of disease. He winds up his remarks on the latter subject with a passage in which his vivacity seems to have carried him slightly beyond the limits of urbanity, but which, withal, is so capital, that we cannot help extracting it:

"In this country, when even the lowest classes, in their apprehension of events, consented to give up the easy explanation afforded by ghosts, science also began to relinquish its ghosts; its electrical, magnetic, and other spirits. But among the Germans, at the present day, ghosts pervade all life, all legends, all poetry, and all philosophy. With their aid, our doctors would soon reach the incantations of magic, and would rival the Peeaïs or priest-doctors of the American Indians. Some indeed of the more spiritually inclined have already followed these their worthy rivals, in the adoption and practice of Mesmerism, with all its contemptible antics and disgusting humbug!"

In conclusion, we can conscientiously recommend Mr. Walker's book to the perusal of all our readers. His mode of reasoning is not indeed adapted to the establishment of scientific truth, but he is continually throwing out ideas which may aid others in its pursuit, so that his work, though full of fallacies, is far from being useless.

Art. XIV.

Transactions of the Pharmaceutical Society. Edited by Jacob Bell. Nos. I-VI.—*London*, 1841. 8vo, pp. 293.

Although partaking somewhat of the nature of a journal, from its publication in monthly parts, still, as being the Transactions of a Society, this work comes legitimately within the province of the reviewer. As, however, we purpose treating it as a journal, by occasionally selecting some of its articles for our Third Part, we shall, in the present notice, confine ourselves to the expression of our opinion that the publication is a very valuable one, conceived and conducted in an excellent spirit, and calculated to do much good, not only to the class of readers for whom it is specially designed, but to the professors of medicine in general.

The society from which this publication emanates is of very recent formation, and far from being yet consolidated into the permanent form which it is destined to assume. It has, however, been planned with so much good sense, is carried on with so much zeal, and seems so well calculated to supply a positive want, that we confidently predict its prosperity and usefulness.

The Pharmaceutical Society of Great Britain is to resemble in constitution the colleges of pharmacy now flourishing in various countries of Europe and in America; its main object being to facilitate,

promote, and advance the scientific education of young men entering upon that calling, by enforcing their attendance upon lectures on materia medica, pharmacy, chemistry, and botany; and subsequently to grant them a license to practice pharmacy when a competent board of examiners shall deem them fully qualified. It is the avowed intention and purpose of the members of the association to adhere strictly to the dispensing of medicines, and by no means to encroach upon the legitimate functions of medical men. We therefore trust that the general practitioners, who have become to a great extent a mere trading body, will in common justice eventually abandon the practice of retailing drugs in open shops. By so doing they will be able to discharge their professional duties with more credit to themselves and greater advantage to the public. We understand that the chemists are willing to abstain as much as possible from what is termed *counter-practice*, reserving to themselves a privilege which never has been and never can be abrogated, namely, that of stating the properties and doses of the drugs they vend when requested by their customers. It must be admitted that, to prevent people asking and taking their advice is, as things now stand, next to impossible; and for this, the remedy plainly lies at the door of the apothecary. A chemist may sell a medicine-chest along with a volume on the substances it contains, comprising specific directions for the treatment of divers diseases, and of which he may be the author, yet no legal authority can interfere with him for so doing. How then are we to hinder him from proffering his assistance when solicited by some casual visitor suffering from an aching tooth, a cut finger, or a fleeting indigestion? The thing is so palpably absurd, as to be unworthy of argument.

We consider the undertaking as one of a most meritorious and important nature, and wish it every success. It will not only place its own members upon a far better footing as regards the community, but will prove highly beneficial to the profession at large. The sentiments expressed in the subjoined quotation from the fifth number of the Transactions, in a paper written by the editor, are most commendable:

"*The first step* towards an accommodation between apothecaries and druggists is to establish a mutual good feeling and a sense of *professional honour* between them. When this is accomplished, each class will, as a natural consequence, avoid interfering with the duties of the other, in the same manner and for the same reason that physicians abstain from amputating limbs and drawing teeth.

"We have received a letter from a correspondent, complaining of the injury which druggists sustain from apothecaries retailing medicines; and observing that, 'if druggists are prohibited from visiting patients, surgeons ought, at the same time, to be prohibited from keeping retail shops.' As soon as *the first step* is taken, we think these evils will cure themselves. Apothecaries and druggists are not necessarily hostile to each other; they have one common enemy, destructive alike to the interests of both—and that enemy is jealousy. We therefore recommend that they unite their efforts in putting to flight their mutual foe, instead of increasing existing evils ten-fold by constantly attacking each other. We have not done with this subject: the principles which we advocate are those of harmony and fair dealing between professional men, and we shall take every opportunity of exposing the absurdity of party disputes." (p. 228.)

We understand that nearly one thousand of the chemists and druggists of Great Britain have already enrolled themselves as members; and the members are increasing every week.

PART SECOND.

Bibliographical Notices.

Art. I.—1. *On the Construction and Management of Hospitals for the Insane; with a particular notice of the Institution of Siegburg.* By Dr. Maximilian Jacobi. Translated (from the German) by John Kitching. With Introductory Observations by Samuel Tuke.—*London*, 1841. 8vo.

2. *The Statistics of the Retreat; consisting of a Report and Tables exhibiting the Experience of that Institution for the Insane, from its establishment in* 1796 *to* 1840.—*York*, 1841. 8vo, pp. 62, with 51 Tables.

3. *The Fifty-ninth Report of the Visiting Justices for the County Lunatic Asylum at Hanwell; and Third Report of the Resident Physician*, John Conolly, M.D.—*London*, 1841. 8vo, pp. 137.

These three works are among the most valuable documents on the subject of insanity that have made their appearance for many years; and we hope, on a future occasion, to enter upon a full consideration of the most important subjects treated in them. At present we can scarcely do more than direct the attention of our readers to them.

1. Jacobi's original work is a useful production; the present translation of it is faithfully executed; and enriched as it now is by notes and a long introduction from the pen of Mr. Tuke, it cannot fail to be appreciated as it deserves. It ought, indeed, to be in the hands of every one connected with the projecting, planning, or managing of asylums. In the introduction we have much valuable original matter on the external and internal arrangements for the government of establishments for the insane, on the construction of asylums, and on the statistics of insanity. All these subjects are treated with that sound judgment, cool impartiality, good sense, and benevolent feeling, which characterize the productions of Mr. Tuke, to whom science and humanity must ever remain deeply indebted for being the first in this country to open the way to that mild and just treatment of the insane, which has been so gloriously consummated by Dr. Conolly. The two following remarks in Mr. Tuke's essay are exactly applicable to the authors of this book in its present form, and to the book itself; and commending them to the attention of our readers we shall, for the present, close our notice of the work.

"They who have taken right theoretical views of disordered mental affections may be prepared to state generally the provisions which should be made for their treatment in public or private establishments; but it is only those who have practically observed the circumstances of the insane, in establishments provided for them, and who have corrected their theoretical inferences by the test

of experience and comparative observation, who can supply that particular information which we require in the consideration of the best means of providing for the wants of the insane; whether as regards the construction of their abodes, or those various arrangements and administrations which constitute the economy of hospitals devoted to this class of sufferers.

"If those who are engaged in the chief management of the insane, in our public establishments, would use this work as a text-book for their enquiries and considerations, carefully noting the results of their observations, we might, before long, without aiming at an exact prescription in these matters, arrive at some sound conclusions, in regard to the construction of the buildings; as well as to the arrangements, external and internal, which may best provide for the right government and general economy of these establishments." (pp. 1-2.)

2. "The Statistics of the Retreat" is an elaborate and valuable production, and reflects the greatest credit on its author, Mr. Thurnam, the resident surgeon of that institution. The tables, fifty-one in number, are very comprehensive, and, together with the report which accompanies them, afford considerable information of the most authentic kind. They exhibit the results obtained at the asylum during the forty-four years that it has been in operation. The only thing to be regretted in relation to the statistics is the small number of instances on which the results are based. The average number of cases in the asylum at one time was only 67, and the total number of admissions during the 44 years only 615; the total number of persons admitted was, indeed, only 469, 146 of the cases being readmissions. The long period of time over which the experience of the Retreat extends, the uncommon precision of the knowledge obtained respecting the individual cases, and the extreme accuracy and caution with which the conclusions have been drawn, in some measure compensate for the limitation of the data; and give the whole document a standard value of no ordinary kind.

3. The degree of estimation in which we hold the Hanwell Report is best declared by the fact that we have extracted, in the Fourth Part of the present Number of our Journal, a large portion of Dr. Conolly's report, and a part of that of the magistrates. To these documents we refer our readers for proofs of the vast improvements introduced into the modes of treating the insane in this country in recent times, and especially for irrefragable evidence of the complete success of the system of universal non-restraint introduced into Hanwell by Dr. Conolly. This system has been now two complete years in operation; and every succeeding month has furnished fresh illustrations of its superiority. And when the great extent of the establishment at Hanwell is considered, and the perfect publicity of all the doings within its walls, it is impossible not to accord to the results of the experience afforded by it a degree of importance not easily over-rated. It appears from the magistrates' report that the total number of patients in the asylum on 30th September, 1840, was 858, and on 30th September, 1841, 918; the daily average number throughout the year being 883, and during the last quarter 915. And of this number not an individual has been in personal restraint during the last two years!

Art. II.—*Six Letters addressed to the President of Bethlem Hospital, respecting the Management of that Establishment, &c.* By Philanthropos.—*London*, 1841. 8vo, pp. 28.

These admirable letters are the production, we are told, of a learned Sergeant, a most active and benevolent magistrate of Middlesex. Whoever may be their author, he has good reason to be proud of them; and if the directors of the Institution to which they relate, will only profit by the sound criticisms and enlightened suggestions contained in them, the poor victims of insanity, and medical science, will have equal reason to rejoice at their publication.

"Until recently," says the author, "the proceedings of Bethlem have been a sealed book to the British public. The scanty information contained in the annual statements of the medical officers and the balance-sheets of the auditors afford no aid to the cause of science or humanity. The Report of the Parliamentary Commissioner gave the first insight into the real condition of the Hospital; and the extraordinary interest now excited by the recent reports of the Hanwell Asylum, the great improvements in the treatment of the insane, and some circumstances now before the public connected with the internal discipline of the Hospital itself, renders this a peculiarly fitting opportunity for a calm and temperate enquiry into its real state and condition; an examination into the manner in which the governors discharge their important duties; and the suggestions of alterations and improvement in its management and care."

In his Second Letter, Philanthropos shows that the cures in Bethlem "are comparatively small;" complains that though "the medical staff consists of two physicians, a surgeon, and an apothecary," yet that "the records of the hospital present a disgraceful blank" in everything relating to "statistical knowledge and medical researches." In his Third Letter, the author investigates the subject of *Finance*, and "the result of this investigation establishes the melancholy fact, that with the gross income (including the payments in respect of criminal lunatics),exceeding for the last ten years £20,000 per annum the Hospital has during such period supported only a daily average of 228 patients, possessing no comfort, privilege, or enjoyment, beyond the inmates of a pauper asylum, save the grandeur of the building they inhabit, and the knowledge of the ample remuneration awarded to the officials for protecting their persons and property." In the Fourth Letter, the author enters on the important subject of *Medical Treatment*, and justly complains of the difficulties he experiences in coming to satisfactory conclusions, owing to "the entire absence of all statistical tables, medical journals, and useful reports." He first discusses the great question of *restraint*, and shows satisfactorily that five years ago, at least, (the accessible documents do not permit him to come lower down,) an amount of restraint altogether unjustifiable was in use. "During the year 1836, the total number of curable and incurable patients in the Hospital (I purposely omit the criminal lunatics, because it may be said they are a peculiar class,) was 446; the number of patients at various periods under restraint, 108, being within a fraction one fourth of the whole number; and the number of instances of restraint in the register, 495. The duration of restraints varies as much as the causes; but the censurable negligence with which the restraint-registers have been kept, prevents any statistical tables of

periods or causes which can be relied on. This only is clear, that many patients were confined for several days, some for weeks, and it would seem a few for months consecutively."

In the Fifth Letter, Philanthropos examines the subject of the *Present Government of the Hospital*, and shows its extreme faultiness. He "demonstrates that the governors must be quite useless as a controlling power, over the managing part of their own body," while the managing body is shown to be "a mere routine committee for the admission and discharge of patients, and the examination of the hospital provisions;" and that there does not exist any "real, active, searching, superintending power." All this is lamentable; and, accordingly, in his Sixth Letter, the philanthropic author submits to the consideration of the president a list of *Proposed Improvements*. These consist principally, 1, In "the establishment of an independent and unbiassed body of governors;" 2, in the formation of "an active, responsible, representative committee, with ample though defined powers," consisting of from twelve to eighteen members elected annually; 3, "In the appointment of a resident physician, who, for an adequate salary, would be called upon to devote his whole time to the duties of his office." Well may the author say that "this alteration in the management of the Hospital is indispensable."

"This great desideratum once established," continues our author, "all its natural consequences will immediately follow. Aided by some educated mind of superior powers, whose fame and fortune are dependent on his diligence, the committee would proceed, in the adaptation of the Hospital and its inmates, to the vast improvements of which they are susceptible. The gloomy grandeur of the galleries would give way to the simple cheerfulness adapted to the habits of the patients,—the gaol-like windows would be removed,—the costly garden-walls would be demolished,—the airing-grounds planted and rendered cheerful,—the gardens would be opened for the enjoyment of the patients, and the vast space in front of the two wings devoted to their use,—the dietary would be revised, useful journals would be kept, restraints would be repressed, occupations encouraged, and amusements invented—the spirit of intellectual improvement would everywhere be visible; and whilst valuable records for future ages would be yearly accumulating in the annals of the Hospital, the establishment of clinical and other lectures (so successfully introduced into the French asylums) would at once stimulate the resident physician in the performance of his duties, and efface the national stigma that, in this wealthy and benevolent country, we do not possess one school of instruction in this most interesting and important branch of medical education."

In the name of science and humanity we return our thanks to the benevolent and eloquent author of this most seasonable appeal; and we confess that we look forward with considerable confidence to the early advent of the time when this establishment shall be as conspicuous in its moral and scientific relations as it now is in its physical and financial features; for we entirely coincide with the author of this pamphlet in believing that "a perusal of the list of governors is alone sufficient to satisfy the most prejudicial objector, that no abuse will be wilfully upheld; and that if Bethlem does not take that rank in public estimation to which, by its wealth, its power, and its respectability, it is entitled, it is because of the sluggish nature of its constitution, and the unhesitating belief of its members that all is rightly done when all is rightly intended."

Art. III.—*Outlines of Comparative Anatomy, presenting a Sketch of the present state of knowledge, and of the progress of discovery in that science; and designed to serve as an Introduction to Animal Physiology, and to the Principles of Classification in Zoology.* By Robert E. Grant, M.D. F.R.S. L. & E. F.L.S. &c. &c., Professor of Comparative Anatomy in University College, London.—*London*, 1841. 8vo, pp. 656.

We scarcely know whether we are to regard this work as now complete, according to the views of the author and publisher, or whether more of it is still to appear, at some period equally indefinite with that of the publication of the several parts of which it consists. We should gladly believe that the volume before us does not complete the work, since it does not include one of the most interesting and important departments of the science—the generative system; and, moreover, it is destitute of introduction, table of contents, index, or any other guide to facilitate its use. From the manner in which it is put forth, however, we are bound to infer that it must be regarded, for the present at least, as complete; and our remarks upon it will, therefore, be made with this understanding. We hope on another occasion to lay before our readers a full account of this important volume; at present we purpose giving a mere note of its general character and contents.

We extremely regret to be obliged to speak of the work in what may seem a depreciating spirit; but we feel it to be our duty to enter our protest against the mode in which it has been published; and the more so because there are at the present time several important works in the course of publication to which the same remarks equally apply. It has come forth in seven parts, of which the *first* was published early in 1835, with the following announcement: "These Outlines will appear in Four Parts, in order to accelerate the publication. The succeeding parts will appear at regular intervals, so as to complete the work by the 1st of October next." The *second* part was published in July 1835, with the announcement that the work would be completed "in the course of next winter." The *third* part did not come out until June 1836; and it was then stated that the work would be completed in Five Parts, and that the next would be published in the following October. The promise was again broken; the *fourth* part did not appear until 1837. The *fifth* part was delayed until 1839; and was far from completing the work. A *sixth* was published in 1840; and a *seventh* has just made its appearance. Now we hold that any author who thus breaks his faith with the public (even from unavoidable causes, as we hope may have been the case in the present instance), inflicts a grievous injury both upon them and upon his brethren of the craft; upon them, by leading them to purchase, under the idea of their being speedily completed, portions of works which, whilst incomplete, are of comparatively little use to them, and thus preventing them from expending their money upon others which, with perhaps less intrinsic merit, will be of more immediate value to them; and upon his brethren, by inducing a general distrust in any such promises, even when a fair guarantee can be given that they shall be fulfilled. Further, we are confident that the mischief falls back, in the end, upon the author himself; for the confidence of the public will be most

assuredly withheld from any work in which he may hereafter engage, until it shall be completed; and then much of its novelty will be lost. We can scarcely imagine a case in which there could be less excuse for the delay than there seems to us to have been in the present; for the volume before us is little else than an abridgment of the course of lectures reported in the Lancet (to the accuracy of which reports Professor Grant himself bore testimony), of which the publication was completed about the same time with the appearance of the first part. Upon an attentive examination of the work, we can find very little that is not contained in those lectures. Indeed, if it had been Professor Grant's desire that the whole should represent the state of science in the year 1835, instead of its advanced condition in the year 1841, he could scarcely have excluded more completely the results of late enquiries. From this remark, however, we must exempt the last part, which contains an account of the Tegumentary Organs, based upon the recent discoveries of Henle, Schwann, and others. We feel bound to notice a serious error into which Professor Grant has fallen, in his description of these parts. He has continually used the term *cytoblast* as synonymous with "nucleated cell," instead of employing it, according to the meaning of its inventor, to designate the *nucleus* of the cell. We should not have adverted to this, but for the apprehension that it may prove a source of great perplexity to the readers of the treatise.

We have made the foregoing remarks under a painful sense of our duty to the public; and we now come to discharge the much more gratifying task of strongly recommending the work to the notice of our readers. In the opinion we express of it as a whole, we shall, for the reason assigned above, consider ourselves as reviewing it at the period at which it was originally intended to have been completed, namely October, 1835. At that time it would have certainly stood without a rival among British treatises on Comparative Anatomy; in regard alike to the comprehensiveness of its plan, the philosophical spirit which pervades it, the fulness of the details into which the reader is led without weariness, and the graphic truth of the descriptions. Professor Grant has long been known to the scientific world by his unwearied devotion to his favorite pursuit; and we know many who feel pleasure in attributing to him much of their taste for it. Of two out of three English works, which are at present in the hands of the student of comparative anatomy and physiology, we know that the authors are largely indebted to him for their materials; and we only regret that the tardiness of the completion of his own treatise should have prevented it (as we fear it must) from taking that place in public estimation to which it is justly entitled. We believe that Dr. Grant was the first, in this country, who attempted (in his lectures) to give a systematic exposition of the several organs of the animal body, in the varied, yet progressively advancing forms, which they present when traced upwards through the ascending scale. This exposition was characterized by a strongly-marked originality, in combination with a thorough acquaintance with the labours of others; it was full and clear in its details, yet not too minute to be impressed forcibly on the mind; and these details were connected by principles of which he never allowed his audience to lose sight, although they were not enunciated with the pompous dogmatism of some foreign *savans*. These qualities are strongly

marked in the treatise before us; and notwithstanding the disadvantages under which it *now* appears, we can still recommend it as containing what we cannot point to in any other English work—a full and graphic description of the several systems of the animal body, each considered systematically by itself, yet in connexion with the rest. It is illustrated by 147 wood-engravings, many of them containing several subjects, and on the whole well executed, though rather inferior in style to the highly-finished illustrations of more recent works. We may as well subjoin a list of the heads of the treatise, which are as follows: I. Organs of Support, or Osseous System; II. Organs of Attachment, or Ligaments; III. Muscular System, or Active Organs of Motion; IV. Nervous System, or Organs of Sensibility and Motility; V. Organs of the Senses; VI. Organs of Digestion; VII. Chyliferous System; VIII. Sanguiferous System; IX. Organs of Respiration; X. Organs of Secretion; XI. Lymphatic System; XII. Excreting Organs; XIII. Tegumentary Organs.

Art. IV.—*The Physiology of Digestion, considered with relation to the principles of Dietetics.* By Andrew Combe, M.D. Third Edition, revised and enlarged.—*Edinburgh*, 1841. 8vo, pp. 374.

Of this admirable work we have already more than once expressed our high opinion. It leaves nothing to be desired on the subject of which it treats, as far as regards the class of persons to whom it is principally addressed; and we are of opinion that there are few members of the profession who will not derive advantage from its perusal. In the present edition, among other improvements, we have a new chapter explaining more fully than heretofore the relation subsisting between the different kinds of food and the principal varieties of the human constitution.

Art. V.—*The Diseases of Children; a Treatise intended for the use of the Student and Junior Practitioner.* By Augustus Rees, M.R.C.S., Surgeon to the General Dispensary for Children. — *London*, 1841. 8vo, pp. 300.

Mr. Rees's little volume is, we think, well adapted for the purpose for which it is intended, viz. to serve as a practical guide to the junior practitioner. It is evidently the work of a man of observation and experience, who knows what has been done by others and has tested their experience by his own.

Art. VI. — *The Oration delivered before the Medical Society of London, at their Sixty-eighth Anniversary, March* 8, 1841. By W. D. Chowne, M.D., &c. Printed at the request of the Society.—*London*, 1841. 8vo, pp. 71.

We have been both interested and instructed by the perusal of this performance. It exhibits and illustrates in a lucid manner the means by which medical science is *advanced*, and the uses to which it is *applied*. The whole manner of the oration evinces a degree of candour, learning, and humanity, alike honorable to the author and the society at whose sixty-eighth anniversary it was delivered.

Art. VII.—*A Concise and Practical Treatise on the principal Diseases of the Air-passages, Lungs, and Pleura.* By A. Catherwood, M.D. C.M.—*London*, 1841. 8vo, pp. 208.

We know not where Dr. Catherwood can have learned that "a concise treatise on the diseases of the lungs, &c. has long been a disideratum;" and we are most certain that the work he has produced could never "stop the gap in the medical literature of the country," if it really existed. He has, he says, written for "the public generally" as well as the profession, having "endeavoured, in every instance, to adapt the language to the comprehension of the non-medical reader." Now Dr. Catherwood must have formed an exalted estimate of the knowledge of his non-medical readers, since he quotes German by the page, and Italian and Latin occasionally, without remorse, and without translation. To be sure, the quotations are all about very simple matters, and are certainly not worth translating; but we may be allowed to wonder why they were disturbed in their native places. For instance, he tells us, *in German*, the remarkable novelty, that a certain Dr. C. A. W. Berends "has correctly observed" that the palms and soles particularly are hot in hectic fever! Sometimes, however, Dr. Catherwood condescends to translate—as where he tells us (p. 159) that in certain cases "*das geräusch des gesprungenen topfes* of the *German* writers is heard on percussion," which "*sound of the boiling pot* can be imitated," &c. Now, surely Dr. Catherwood cannot be ignorant that this particular sound does not belong to the *Germans* at all, but to the *French* (bruit de pot felé), and that both the original French expression and its German translation mean a *cracked* not a *boiling* pot. But we could easily pardon immature taste parading unnecessary quotations, and many other defects of style and manner wherewith the book is rife, if it contained anything that all the world did not know before; or even if it presented what was known, in a more useful or more attractive form, for the benefit of either the profession or the public. We are sorry to say, however, that this is not the case, and we end as we began by wondering what induced Dr. Catherwood to risk his professional credit in so rash a volume as the present.

Art. VIII.—*Clinical Researches on Auscultation of the Respiratory Organs, and on the First Stage of Phthisis Pulmonalis.* By Jules Fournet. Translated from the French by Thomas Brady, M.B. Fellow and Professor of Medical Jurisprudence in the King and Queen's College of Physicians in Ireland. Part I.—*London*, 1841. 8vo, pp. 227.

We gave so extensive a review of M. Fournet's original work in a former number of this Journal (vol. IX. p. 299), to which we refer the reader, that nothing remains for us to say except that the translation is an excellent one, and that the notes supplied by Dr. Brady add considerably to the value of the treatise. They whom our analysis does not content, and who are not in possession of the original volume, ought assuredly to place the English version on their shelves.

ART. IX.—*A Practical Treatise on the New Operation for Lateral Curvature of the Spine; showing those cases in which the operation is admissible. With Plates.* By G. B. CHILDS, M.R.C.S. &c. — *London*, 1841. 8vo, pp. 56.

THE work before us bears no internal evidence whatever of any necessity or good reason for its appearance in the literary world, at least as *a book;* a page and a half of any journal being amply sufficient to contain the "kernel" that is housed in the fifty-six pages of husk and shell. We shall not, therefore, attempt any deliberate analysis of its contents, the pith of which may be given as follows:

The cases in which "the operation is alone admissible" are arranged under two heads: 1, "Those which are primarily and fundamentally dependent on increased muscular development;" 2, "Those in which the muscles are but passive agents in retaining the spine in its abnormal situation." (p. 7.) The first class of curvature is usually seated in the upper region of the back; contrary to the opinions of Messrs. Shaw, Skey, &c., it is usually the original curve, and when the lumbar region bends it does so secondarily; the latissimus dorsi, trapezius, and rhomboid muscles are those usually in fault; the right side is the one usually affected; the remote cause is peculiar manual avocation inducing excessive action of these muscles over that of their fellows; and the remedy consists in subintegumental division of the aforesaid muscles, close to the spine. The second class of curvature is usually seated in the lower parts of the spine; the longissimus dorsi and sacrolumbalis (which the author affectedly terms "sacrocostalis") are the offending muscles; they will be found constituting a tight faulty cord on one or other side of the curve, usually the convex, which cord is to be subintegumentally divided, and more especially its tendinous investing fascia; but on the whole, the author's views on this latter division of his subject are sufficiently misty and obscure to the reader, whatever they may be to the writer. Lastly, the "new operation" is nothing more than what may be now not inappropriately termed "the old operation" of M. Guerin and others.

On one point we most cordially agree with Mr. Childs, and only regret that it is not more generally and faithfully attended to, namely, that members of our profession cannot be too "wary in raising hopes that can never be realized, by submitting the patient to an useless, although *simple* operation." (p. 48.)

The literary qualities of the work are on a par with its scientific value. But we think we have discovered a reason for this. The author has purposely husbanded his powers until the close, and has kept the body of the work dull and subdued, in order that the peroration may burst forth with all its splendour. The latter is so exquisite in its way, that we give it without curtailment:

"Before closing my subject, I cannot but express a regret, that, ere this, some establishment has not been instituted for the reception of those unfortunate beings, who, deprived of the means of procuring for themselves a treatment adapted for their peculiar cases, are doomed to pass their lives neglected and uncared for. Goaded by a sense of their unhappy condition, by the taunts and jeers of those whose minds are unpolished by the refining powers of education, they become thoughtful and morose; bearing about them an impenetrable halo of dark and gloomy thoughts, through which no ray of light can pierce, no gleam

of hope, to cheer them through the turbulent stream of life. Their society shunned, their opinions slighted, their views cramped, by the oppressive load under which they toil, their minds yield not to the elasticity and buoyancy of youth; they participate not in the enjoyments of society or the cheering anticipations of domestic love. Their life to them is one cold dreary winter; no summer's sun e'er comes to thaw the frigid ice, which firmly clasps their beating hearts. No smiling spring, with joyous buds that bursting into life impart new charms to all around, can e'er remove from them that one, that all-absorbing grief. Friends who in their earlier life had felt some kindred tie of love, have one by one dropped silent to the grave, and they alone are left, without one social tie to cheer or raise their drooping hearts, but pass through life without a hope, unloving and unloved."

Our armies swore terribly in Flanders; but it was nothing to this!

Art. X. — *Popular Lectures on Man, his Structure and Functions, considered with reference to Health, Culture, and Natural Theology.* Illustrated with Woodcuts. By John White, Surgeon.—*London,* 1841. 8vo, pp. 252.

This little book consists of Seven Lectures which were delivered at the Highgate Literary and Scientific Institution. The fact of lectures of the kind being in request at so small a place as Highgate is creditable to the character of its inhabitants, and the lectures themselves are very creditable to their author. They convey, in a simple form, what the title-page indicates, and will be found both pleasant and useful to teachers and to parents who desire the best kind of knowledge for their pupils and their children.

Art. XI.—*A Practical Treatise on the Diseases of Children.* By James Stewart, M.D.—*New York,* 1841. 8vo, pp. 544.

We have been disappointed in Dr. Stewart's book. It is professedly a compilation—and it is obviously a compilation. The materials have not undergone that fusion in the author's mind which makes a good compilation read like an original work. If they had been submitted to such a process, the resulting book would have been half its present size, and double its present value. As it is, however, Dr. Stewart's treatise will be useful to the diligent student and junior practitioner as a faithful epitome of what is known on the important subjects of which it treats.

Art. XII.—*First Lines of Physiology; designed for the Use of Students of Medicine.* By Daniel Oliver, M.D., Professor of Materia Medica in the Medical College of Ohio.—*Philadelphia,* 1840. 8vo, pp. 514.

We noticed with commendation (Br. and For. Med. Rev., vol. VI. 195,) this work on its first appearance. We have only room now to state that it is much enlarged and greatly improved, and cannot fail to be highly useful to the author's countrymen, "especially to those for whose use it was originally designed, who are preparing to enrol themselves among the members of the medical profession."

PART THIRD.

Selections from the British and Foreign Journals.

I. THE FOREIGN JOURNALS.

ANATOMY AND PHYSIOLOGY.

On the Motions of Respiration, with especial regard to Neurological Questions. By A. W. Volkmann.

Brachet and many with him maintain that we breathe because the sensation of the necessity of doing so instigates us; and that this necessity we feel by means of the vagus nerve. His proof is that after division of the vagus this sensation ceases; the animals do indeed breathe after the operation, but it is only by habit, and when they at last die of suffocation they do not show the least sign of agony or desire of breath. But there are many objections to this doctrine. Habit ought not to be able to maintain the motions of respiration more than those of any other apparatus whose excito-motory nerves are divided; and rabbits five hours old will breathe after their vagi are cut, though surely not from habit. Besides, it is not probable that a sensation of the necessity of breathing would depend on the lungs alone, since when breathing is stopped all the body together suffers. And direct experiments prove Brachet's opinions false.* The author repeatedly fastened stop-cocks to the tracheæ of animals, in such a manner that he could at pleasure supply them with air or cut off the supply, and in every instance the signs of agony when the access of air to the lungs was prevented, were equally intense whether the vagi nerves had been divided or not. It was obvious therefore that the sensation of a need of breathing was not centripetally conducted through the vagus.

Marshall Hall's view is that the respiratory movements are partly reflex and partly voluntary. The former, he holds, are induced chiefly by the carbonic acid which excites the branches of the vagi in the lungs, and, on some occasions, by cold applied to the skin. But if the vagi be divided, he thinks we breathe voluntarily, because we feel the need of breathing, which is conveyed centripetally not by the vagi but by other nerves; and if both the vagi be divided, and the brain removed, then the respiratory movements cease altogether, because both the centripetal conduction through the vagi, and the centrifugal impression of the will, are prevented. But, the author holds, that this theory will not agree with the law observed by Davy and Arnold that animals breathe more slowly directly after the division of the vagi than they did before; nor with the fact that in numerous experiments he found young animals (dogs, cats, and rabbits) continue to breathe for a time after division of the vagi, and complete removal of the cerebrum and cerebellum.

Seeing then, that the involuntary motions of respiration do not depend exclusively on the vagus, the question comes, what nerves are there besides the vagi,

* Dr. Volkmann mentions other errors of this author sufficient to induce much caution in receiving both his statements and his opinions.

which excite the medulla oblongata to reflex action? Are they the pulmonary branches of the sympathetic? To determine this, the author removed from a young cat, the brain, (with the exception of the medulla oblongata,) divided the nervi vagi, and, leaving the phrenic nerves, extirpated the lungs. But breathing still went on for forty minutes! all its movements continued energetic; the diaphragm was powerfully contracted, and the thorax fully elevated. The same experiment repeated in several young dogs produced the same results.

Other authors, again, regard the medulla oblongata as the *primum mobile* of the respiratory movements; thinking that it is its peculiar office to keep them in action; and that for this it does not require a special stimulus, but only the co-operation of their general forces which are indispensable for the maintenance of vitality. But this view will in no degree explain the first respiration after birth; for we should have to suppose that the medulla, which is sufficiently well developed in the uterus for the production of other movements, is suddenly charged with vital power for these particular movements directly after birth; a supposition which is most improbable.

It therefore still remains to find what is the stimulus which first excites the medulla oblongata, (the centre of the respiratory movements,) and which in after-life still continues to excite it and through it the respiratory motions. It is not either the carbonic acid in the lungs, or the atmospheric air, for the former cannot exist in quantity sufficient to have influence till respiration has commenced, and, for the latter, land animals breathe even when they are born in water or in their fœtal membranes; a fact of which the author and Dr. Schneider, confirming Leclard's observations, have frequently convinced themselves. The author believes, therefore, that the stimulus by which the reflex motions of respiration are brought on and continued, is the carbonic acid, not that which is set free in the air-passages, but that which is in the blood, that the part in which it excites is every portion of the body, and not merely the mucous membrane of the lungs; and that the excitant nerve is any nerve with a power of centripetal conduction and of action on the medulla oblongata, and not exclusively the nervous vagus.

The following therefore is, in brief, his doctrine. The respiratory motion finds its impulse in the need of respiration, and this need arises from certain relations of nutrition, not of particular parts, but of the whole body. All parts receive oxygen from the blood for the carbonic acid which they give to it; and as soon as the blood surcharged with carbonic acid cannot satisfy this need, an unnatural state of the part ensues which may be regarded as the organs' *want of breath* (Athemnoth.) This want of breath exists constantly in a minimum, because the animal substance is constantly tending to oxygenization, even when the lungs are properly in action. In this minimum condition it acts on the centripetal nerves, and through these on the spinal marrow, without, however, exciting any sensation; but when the same need rises to an excess, a sensation of it is not wanting, and it gives rise to the sense of suffocation. In all this there is nothing assumed but the exciting influence of animal tissues needing respiration on the nerves, and this is no violent hypothesis.

The theory thus proposed is in every respect sufficient for the explanation of former obscurities, if only it can be proved that a great number of the centripetal nerves are capable of so exciting the medulla oblongata as by a reflex influence to bring on the respiratory movements. And this is to a considerable extent already proved. The influence of mechanical irritation of the air-passages in beheaded animals, of the sudden application of cold to the skin, and of mechanical injuries of it in young animals, and of stimulating the cervical and other nerves, and the intimate relation between morbid conditions of various organs and changes in the mode of respiration, all tend to prove that these movements of breathing are affected by the state of the nerves of many other parts besides the lungs.

It is, moreover, in favour of this theory that by it alone the following facts are explicable: 1. That the fœtus does not breathe before birth, although it

has attained all the development sufficient for the respiratory movements; the reason being, that there exists no want of breath, because the umbilical veins convey as much oxygen to the parts as they require. 2. That the fœtus does breathe directly after birth, though it comes into the world in an irrespirable medium, such as water, because after division of the umbilical vessels, want of breath ensues. 3. That every separate portion of the body which is interested in the respiratory movements, so long as it remains connected with the living medulla oblongata, continues its respiratory action, although separated from the rest of the general apparatus: in a young dog, the cerebellum and cerebrum were removed and the medulla divided at the first cervical vertebra, and yet the larynx continued its natural respiratory actions. 4. That under almost every condition of life the number of respirations and pulsations increases and diminishes in a certain parallelism, for the number of the heart's beats is a kind of numerical expression for the energy of nutrition, and if nutrition is going on rapidly, the want of breath (in the sense assumed by the author,) is proportionally increased.

[The above experiments made by Volkmann are similar to, and the results he has arrived at are exactly the same as those made by Dr. John Reid, and published some time ago in the Edinburgh Medical Journal, (Nos. 134 and 139,) but which appear to be unknown to Volkmann. In these memoirs Dr. Reid adduces numerous experiments to show that the *besoin de respirer* continues after section of the pneumogastric nerves, and shows the insufficiency of the statements of Brachet on this subject. Dr. Reid also proved that the respiratory movements continued after removal of the cerebrum and cerebellum, and insists that the inferences from these experiments are subversive of the doctrines entertained by Dr. Marshall Hall on this subject. Dr. Reid also adduces experiments to show that the respiratory muscular movements will continue after the sympathetic nerve is divided and the lungs removed; so that the experiments of Volkmann are only of importance, that they confirm in every respect these previously performed and published by Dr. Reid, and that apparently in perfect ignorance of what had been done by him. Volkmann throws out a suggestion which is not contained in Dr. Reid's memoirs, viz. that the want of oxygen in the blood and its being surcharged with carbonic acid, may act as an excitant upon the incident nerves of the body generally, and so produce respiratory movements; while Dr. Reid gives, as a probable explanation of the continuance of the respiratory movements after section of the vagi and removal of the lungs, the impressions made upon the filaments of the fifth pair and the spinal nerves distributed in the skin. It should be remembered that the respiratory movements are much diminished in frequency after section of the vagi, falling, as Dr. Reid found in his experiments, to about one half their former frequency. The experiments adduced by Volkmann in favour of his suggestion of the cause of the continuance of the respiratory movements after section of the vagi nerves, do not by any means justify this inference; for it is perfectly obvious that if the lungs were removed and the vessels left united, all the blood of the body would, in a very short time, escape from the blood-vessels; or if the pulmonary vessels were tied up it is equally obvious that the circulation would soon come to a stand; yet we are informed that the respiration continued in young animals for forty minutes after extirpation of the lungs, cerebrum and cerebellum, and section of the vagi. We have also ourselves reason to know that the respiratory movements will continue for a short time after the vessels are drained of their blood, and consequently cannot entirely, if at all, be explained by the theory of Volkmann. We are not acquainted with any experiments made by Davy on the effects of the division of the vagi upon the respiratory movements, and strongly suspect that Volkmann has here fallen into some mistake.]

Müller's Archiv. Heft iv. 1841.

Experiments on Muscular Irritability and Nervous Action. By M. Longet.

The object of M. Longet is to determine the degree or limit to which muscular irritability is subjected to nervous action. At the sitting of the Royal Academy of Sciences, May 24th, 1841, he proved that a motor nerve, which has been separated from the brain or spinal marrow, loses on the fourth day its power of producing contraction of the voluntary muscles, under the influence of a stimulus, even that of galvanism. In a second communication at the sitting on the 26th July, he brought forward his researches on the question whether muscular irritability disappeared or not with nervous excitability; which were instituted because he thought that Haller's experiment to prove that there was an inherent power of contraction in muscular fibre independent of nervous force was fallacious, contraction of the heart persisting after its having been torn from the chest by virtue of latent nervous power. To avoid this source of error he divided the sciatic nerve and applied galvanism four days afterwards to its free extremity without exciting the least trembling of the muscles to which it was distributed; and yet at the end of fifteen days these muscles contracted strongly under the influence of a very slight stimulus *immediately* applied. After a month the power of contraction although less is still very sensible, and it was appreciable towards the seventh week. At that time the muscular fibre had degenerated and ceased to contract under the immediate application of the strongest stimulants. It is only, then, in consequence of a lesion of nutrition, of which the effects are slowly pronounced, that the muscular fibre in losing its organic characters, loses also its essential property, irritability, which exists long after all nervous influence has ceased.

[Though we think it right to give insertion to the above in order to show what our neighbours are doing in physiology, we must remark that Dr. John Reid has already *proved* all that is here indicated. In addition to what is here stated, Dr. Reid has shown that the irritability of the muscle after section of the nerve may be maintained by its frequent exercise, and that it may be recovered, if exhausted, provided the nutrition of the muscle be not impaired.]

L'Examinateur Médical. Juillet 25, 1841.

Experimental Researches on the Functions of the Nerves of the Larynx, and on the Influence of the Accessory Nerve of Willis on Phonation. By M. Longet.

This is a very able and important paper, but so exceedingly long that we can only give the conclusions at which the author arrives as the result of his experiments.

1. The superior and inferior laryngeal nerves have influence upon phonation.

2. Of the two branches furnished by the superior laryngeal, the external only (which supplies the crico-thyroid muscle), when it is divided, modifies the voice; and the internal does not govern the contractions of the arytenoid muscle, but the sensibility of the laryngeal mucous membrane only.

3. If the nervous filaments of the crico-thyroidei be divided alone, or in other words if these muscles be paralysed, the voice becomes disagreeably hoarse, and their paralysis prevents the production of cries in young animals (which after division of the recurrents still utter acute cries), at the same time that it augments the difficulty of respiration.

4. After division of the recurrents very young dogs still produce sounds remarkable for their acuteness, although older dogs remain dumb; these facts have been explained by the special conformation of the vocal and respiratory parts of the glottis, parts the relative dimensions of which vary with age.

5. These differences in the relative size of these portions, in the form and density of the arytenoid cartilages at different ages, may explain the danger of imminent suffocation at one age ceasing at the other.

6. Animals deprived of their inferior laryngeal nerves respire more quickly than in the normal state.

7. The contraction of the arytenoideus is subjected to the recurrent and not

to the superior laryngeal; this muscle is the especial *constrictor of the respiratory glottis.*

8. The lateral crico-arytenoid muscles, also supplied by the recurrent, do not dilate the glottis as most physiologists assert; on the contrary they contract it and are the especial *constrictors of the vocal glottis.*

9. It is therefore incorrect to state that the constrictor muscles of the glottis receive their nerves from the superior laryngeal, and that after the section of the recurrent nerves, these muscles preserve their action, closing the glottis.

10. The pneumogastric governs the sensibility of the larynx, the intrinsic movements of which are subordinate to the accessory nerve of Willis.

[In a large part of his conclusions in this paper also—all, in fact, which concerns the special functions of the *superior* and *recurrent* laryngeal nerves—the author has been anticipated by Dr. J. Reid, who has also noticed and explained the difference between young and old dogs, in regard to the effects of section of the nerves on respiration. The only points absolutely new are the statements that the arytenoidei are the constrictors of the *respiratory glottis*, and the *crico-arytenoidei* of the vocal glottis. The inference No. 10 necessarily follows from Valentin's doctrine that *all* the motor fibres of the pneumogastric are derived from the spinal accessory; these two nerves being, at their origins, analogous to the two fasciculi of roots of the spinal nerves. (See Br. and For. Med. Rev., vol. XI. p. 291.)]

Gazette Médicale de Paris. Juillet 24, 1841.

On the Functions of the Epiglottis, and on the Closure of the Glottis in Deglutition, &c. By M. LONGET.

THE author remarks that four causes are opposed to the introduction of solid or liquid food into the air-passages; 1st, The movement of the larynx upwards and forwards combined with that of the tongue backwards whose base is applied on the upper orifice of the larynx; 2d, The epiglottis, which, placed between the larynx and the base of the tongue, follows the movement given to it by the latter, and, as it were, moulds itself upon the glottis; 3d, The exquisite sensibility of the mucous membrane covering the supra-glottic space; 4th, The occlusion of the glottis.

A remarkable fact pointed out by M. Longet is that in the second period of deglutition, the closure of the glottis is still effected after the division of the nerves which govern all the proper muscles of the larynx. He saw that this is due not to the crico-thyroid muscles which are thus paralysed, nor to the thyro-hyoid (which he removed), but to the inferior constrictors of the pharynx, which, embracing the diverging alæ of the thyroid cartilage, folds them one against the other, approximating the borders of the glottis, and pressing on the muscles external to it.

The epiglottis was completely excised in six dogs; solid food still passed with facility, but the deglutition of liquids was often not accompanied but followed by a convulsive cough, which the author explains by the falling into the supra-glottic vestibule of some drops of liquid, which even after deglutition still lie upon the dorsum of the tongue, but which, if the epiglottis is in its place, flow over it and over the back part of the larynx. The removal of the epiglottis did not materially affect the voice.

If, in a dog, one cuts the two recurrent nerves and the branches supplying the crico-thyroid muscles, so as to paralyse all the proper muscles of the larynx, but leaves the internal laryngeal nerve, which presides over the supra-glottic sensibility, intact, and then makes the animal drink cautiously, nothing passes into the trachea. But if the internal laryngeal nerves be also divided, the glottis still closes, but some drops of fluid fall into the trachea, because the animal not being aware in time of the presence of the liquid, its glottis often closes too late.

The occlusion of the glottis is not indispensable to the deglutition of liquids

poured cautiously; for M. Longet has made animals swallow though he kept the borders of the glottis a little separated, by means of dissecting forceps.

He concludes that the displacement of the base of the tongue and the epiglottis are the two most important conditions, and that the closed glottis is only the last barrier which nature sets up against the passage of food into the larynx.

L'Examinateur Médical. Octobre 17, 1841.

On the Occurrence of Urea in the Blood. By J. F. Simon.

The author has never failed to find urea in the blood of those who have died with the granular degeneration of the kidneys. In the blood also of a woman who died with all the signs of cholera, he found a very large quantity; one sufficient for him to obtain crystals of pure urea in very long quadrilateral prisms visible even to the naked eye. This same blood contained a remarkable quantity of biliverdine and biline, so that its taste was strongly bitter. He has lately determined that healthy blood contains a very small quantity of urea; from about sixteen pounds of calf's blood treated by a lengthened, but apparently very accurate process, he obtained distinct crystals of nitrate of urea, but not a trace of biliary matter.

Muller's Archiv. Heft v. 1841.

A Case of Double Vagina, Double Cervix Uteri, and, probably, Double Uterus. By Dr. Fricke, of Hamburg.

A girl, twenty-one years old, was received into the venereal ward of the hospital, on December 17, 1840. She had once before been under medical treatment for gonorrhœa and bubo, and had for three years been leading an unchaste life. Sexual intercourse was not attended with any particular difficulty, and she was wholly unaware of the peculiarities of her generative organs.

The condition of the labia was natural, the left nympha was hypertrophied and projected between them, while the right was of the ordinary size. On separating the nymphæ the orifice of the vagina was seen to be divided by a septum arising on either side and from the posterior surface of the urethra, and being attached to the posterior surface of the vagina a little to the right of the mesial line. Its breadth at its origin was about one inch and a quarter, it then narrowed to half an inch, again expanding to an inch in breadth at its insertion. This septum was found to extend up the vagina, and to be about two lines in thickness. It was not perpendicular, but curved with its convexity to the left, and the right vagina was that which, according to the woman's statement, had been always used in sexual intercourse. The left vagina was narrower than the right, and the os uteri at its termination appeared smaller when viewed with a speculum, but well-formed and resembling that on the right side. A sound could be introduced into each os uteri, to the depth of three-quarters of an inch on the right side, and of one inch and a half on the left side; but this depth was not sufficient to allow of bringing the ends of the two sounds into contact, and of thus ascertaining whether the uterus was likewise divided by a septum, or whether each os uteri terminated in a common cavity.

On examining *per anum*, a depression could be felt extending for an inch between each cervix uteri; but beyond this point the finger could not reach.

The patient had not menstruated since her admission into the hospital, it was therefore not possible to say whether the secretion flowed from both, or only from one os uteri.

Zeitschrift für die gesammte Medicin. October, 1841.

On a Ligament in the Velum Palati. By Dr. Pappenheim.

It is easy to see with the naked eye that there is a white streak on the anterior median line of the velum, which takes its origin from the lowest extremity

of the uvula, thence ascends, dividing the velum into two equal halves, and proceeds to the membrane of the hard palate, where, though it grows thinner, it may be traced to the upper incisor tooth. On the posterior median line of the velum this streak, though less distinct, yet in like manner proceeds from the uvula to the posterior nasal spine. The microscope shows that it consists of large and chiefly longitudinal fasciculi of strong elastic fibres, which are traversed by only a few blood vessels and nerves, and which spread out on either side of the median line of the velum, beneath its mucous membrane, towards the tonsils. It is observable that the middle portion is favorable to the considerable power of contraction which the uvula possesses in the longitudinal direction, and the lateral fibres to the mobility of the whole velum.

The streak to which, only for the sake of indicating its independent existence, Dr. Pappenheim gives the name of ligamentum uvulæ, occurs as well in tender children as in adults, and sometimes splits anteriorly into two halves.

Medicinische Zeitung. Juli 14, 1841.

On Animal Heat. By MM. BECQUEREL and BRESCHET.

THE experiments of M. Fourcault has shown that if the cutaneous exhalation from any animal be prevented by covering its body with some substance impermeable to watery vapour, it dies ere long with many of the signs of ordinary asphyxia. The authors, regarding the exhalation as one of the chief means by which the body loses heat, supposed that by checking it in this perfect manner, a kind of fever would be produced, and the temperature of the animal's interior would be greatly increased. They tried this with delicate and well-managed thermo-electric apparatus, and the result was the very opposite of that which they expected. Of many experiments they relate two, made on rabbits. In one, within half an hour of his being enveloped with the impermeable varnish, the temperature of the deep muscles fell from 38° to 32°; and in half an hour more to 24°5′. In the other, after half an hour, the temperature of the muscles was only 3° above that of the surrounding medium, which at that time was 17°; it had therefore fallen in this short time 18°. In an hour and a half the animal died.

With similar apparatus, the authors confirmed the facts which they and many others had already ascertained, of the temperature of arterial being higher than that of venous blood. In one of their experiments, on a dog, they found the temperature of the blood in the right auricle 37°5′; of that in the left auricle 38°·05; showing therefore an increase equal to 0°·65 in the passage of the blood through the lungs.

L'Examinateur Médical. Octobre 24, 1841.

On the Production of the Blood-globules. By Dr. REMAK, of Berlin.

IN the blood of chicks during the third week of artificial incubation I found blood-corpuscles, some of which were round, some pear-shaped and stalked, and some *biscuit*-shaped, with their large ends coloured red, and containing each a nucleus. These two nuclei were connected together by a thin process which traversed the uncoloured and canal-shaped intermediate portion of the corpuscle. The nuclei of the stalked corpuscles also exhibited a process corresponding to the peduncle of the corpuscle. These observations therefore render it probable that in these instances an increase of the corpuscles is effected by means of *division*. The corpuscles of the embryos of pigs an inch long were from four to six times larger than those of adult pigs; they exhibited double or quadruple nuclei, which probably belonged to different divisions of the blood-corpuscle marked by pale intermediate lines.

To observe the reproduction of blood-corpuscles after losses of blood, thirty pounds of blood were drawn from a horse; and a part of it when examined was found to contain, besides the well-known corpuscles without nuclei, only a few

pale lymph-corpuscles, as they are called. On the following day the latter were found in enormous quantities and much enlarged; and in their interior they exhibited one or more pale reddish globules of the size of blood-corpuscles, covered by the granular contents. On succeeding days these globules appeared the more red the more the granular contents of the parent-cells (for such the pale lymph-corpuscles proved to be) diminished, and the thinner their membrane became. On the fourth day there could be no doubt that the red blood-corpuscles form within the enlarged pale cells, and become free by the disappearance of the latter. The blood of the horse became, as further experiments showed, the more coagulable, and the thickness of the buffy coat became the greater the more blood was drawn; but the buffy coat in such a case consisted of but little coagulated fibrine, with an excessive quantity of the parent-cells of blood-globules.

I have confirmed these results in man about forty times Between the fourth and eighth days after the first considerable abstraction of blood, even during inflammatory and typhous diseases, the commencing regeneration of blood-corpuscles is seen in the appearance of parent-cells, which, as in horses, in consequence of their low specific gravity, are chiefly found in the coagulum of the buffy coat, of which indeed they form a considerable part. My present investigations lead me to expect that I shall succeed in finding easily discernible physical differences between the buffy coats formed by an excess of parent-cells, and those which consist chiefly of coagulated fibrine, and which are the results of the great specific gravity of the blood-corpuscles causing them to sink in slowly coagulating blood. I shall at present only say, that the looseness of the buffy coat is generally the consequence of an excess of new parent-cells. A buffy coat which appears five days, or perhaps even a shorter time after the first bleeding, can never be a true sign of inflammation.

With respect to the production of the pale parent-cells, my present investigations render it probable that they are generated, not within the blood, but in the cells which line the walls of the blood-vessels and lymphatics, but experiments in which I am now occupied will determine this.

Medicinische Zeitung. Juli 7, 1841.

Absence of the Uterus. By Dr. Cramer.

The case here related is that of a woman 30 years old, of perfectly feminine external form, who had never menstruated but had frequently suffered from epistaxis, hæmoptysis, and other signs of local congestions. She married at 23, and at 30, annoyed at having no children, submitted to an examination. No uterus could be found, but the external organs of generation were well formed, and the vagina was of normal width, as long as the finger, and ended in a cul-de-sac. The unusual circumstances of the case were, the existence of natural sexual appetite, and of a tendency to vicarious menstruation, the normal development of the external sexual characters, and the nearly full size of the vagina; all rendering it probable that, though the uterus was deficient, the ovaries were in their natural state.

Medicinische Zeitung. August 18, 1841.

PATHOLOGY, PRACTICAL MEDICINE, AND THERAPEUTICS.

A Case in which an Abscess behind the Œsophagus was mistaken for Œdema of the Glottis, and occasioned death by Asphyxia. By Dr. Ballot, Physician to the Hospital of Gien.

This is not a common occurrence, though cases of it are on record both in French and English writings. The patient whose history M. Ballot relates was a man 40 years of age, of intemperate habits, and much exposed by his employ-

ment to all changes in the weather. He had suffered for some days from sore throat, when on Sept. 27, 1837, he applied at the hospital.

At that time the pharynx was slightly red and dry, but not perceptibly swollen; deglutition was difficult, and the patient was unable to speak aloud. He complained of pain in the pharynx, and of a sensation as of some foreign body there, impeding deglutition and respiration. The finger introduced deep into the pharynx distinguished a tense and elastic swelling, on a level with the upper part of the larynx, apparently continuous with the glottis, and perceptibly diminishing its aperture.

The patient was bled, to 18 oz. by weight, and was put on a strictly antiphlogistic plan of treatment. On the following day venesection was repeated to the same amount, thirty leeches were applied to the throat, and a blister was put on the back of the neck. These measures were not followed by any amendment, paroxysms of threatening suffocation occurred, but deglutition was not observed to be more difficult on the 29th than it had been at the time of the patient's admission into the hospital. The patient continued to be treated very actively until the 8th of October, when laryngotomy was performed in order to relieve him from the suffocation with which he appeared to be threatened every moment.

The opening into the larynx did not produce any marked improvement, but the patient breathed freely after the introduction of a canula into the trachea. During the night, however, the tube became displaced, and in the morning the man was found asphyxiated.

On examining the body after death it was found that no tumefaction of the glottis existed, but that its orifice was almost completely closed by a fluctuating swelling of the size of a hazle nut which projected over its upper part. It extended downwards below the cricoid cartilage, and compressed the cavity of the larynx considerably. It was formed by a collection of healthy pus, which was in contact with the anterior wall of the vertebral column and the posterior surface of the œsophagus, and extended along the sides of the larynx, in such a manner that on the left side it was not more than a quarter of an inch from the upper angle of the incision made between the thyroid and cricoid cartilages. These circumstances explain the prominence felt by the finger passed into the pharynx, as also the reasons why respiration was so much impeded, and why the canula introduced into the opening had such a constant tendency to become displaced. They further suggest that in any similar case tracheotomy should be preferred to laryngotomy.

Archives Générales de Médecine. Octobre, 1841.

On a Peculiar Form of Diarrhœa which attack Stokers on board Steam-boats. By Dr. J. J. Renault, Surgeon to the (French) Government Steamer Minos.

The exceedingly high temperature to which these men are exposed in the performance of their duties, with the cold to which they are often subjected whenever they come on deck concur to render their occupation exceedingly unwholesome, and usually shorten their lives very considerably.

They seem to be liable to a peculiar kind of diarrhœa, which attacks those who had apparently been in the enjoyment of good health. A vague sense of faintness, and occasional shivering, are followed by a sudden desire to relieve the bowels, and the patient after voiding a liquid stool feels much relieved, and is able to go about his occupation till the symptoms recur. The intervals between each attack become shorter, and the diarrhœa continues sometimes only for twenty-four hours, at other times for three, four, or five days, but never beyond this period. The frequency of the stools likewise varies from five to twenty in the twenty-four hours. At first they consist of true feces mixed with mucus, afterwards of a viscid mucus alone, or even are quite watery. This diarrhœa is not attended by pain or colic, the appetite is not even diminished at the commencement of the attack, but afterwards the thirst becomes very great, and more or less complete anorexia ensues.

The disease always terminates in convalescence, but in a few cases a mild form of enteritis supervened, requiring local depletion for its cure. A low diet and opium are the two means by which M. Renault combats the disease, which is important only from its very frequent occurrence, and debilitating effects.

[We suspect that M. Renault takes a generalizing flight somewhat too wide from his premises: but we insert this paper chiefly with the view of calling the attention of the surgeons of our steam-boats to the circumstance.]

Revue Médicale. Août, 1841.

On the Action of certain varieties of Ranunculus, when used as external applications. By Dr. G. Polli.

The ranunculus is frequently employed by the country-people and quack-doctors in different parts of Italy. Dr. Polli had frequently used it empirically in obstinate rheumatic affections and in some instances with such good success that he determined to examine which varieties of the plant were the most powerful, and in what manner the remedy could be best applied.

His experiments with the plants given internally are but very few, but he has ascertained that applied externally the *ranunculus sceleratus* is the most active, then the *acris*, the *bulbosus*, and the *flammula*. The leaf and stem of the *sceleratus* and *acris* are the chief seat of the active principle of those plants, but the powers of the *bulbosus* reside chiefly in the root and stem, and those of the *flammula* in the flower. The summer and autumn are the seasons when the plants possess their virtues in the highest degree, but from the end of December to the end of March they are almost completely powerless.

The fresh plant bruised and applied to the skin is a powerful irritant, producing either a general redness of the skin, or an eruption of miliary vesicles, or blistering the part, and producing a sore which does not heal for fourteen or fifteen days. An essential oil, a vinegar, tincture, spirit, and distilled water which may be prepared from the recent plant, preserve its peculiar properties.

The diseases in which the remedy is now used by Dr. Polli are chronic sciatica, various forms of dyspepsia and gastralgia, and cases in which chronic irritation exists about the larynx or trachea. In cases of sciatica he covers the heel either with the recent plant bruised, or with compresses dipped in some liquid preparation of it, which he allows to remain in contact with the part for twelve hours. At the end of this time he removes the application: in the course of the ensuing twelve hours, the patient experiences considerable pain in the heel which is mitigated by the application of warm poultices, and ceases on the formation of a blister which usually contains a large quantity of serum. In some instances a second application of the remedy to the lower part of the loins is necessary, though very often the first application to the heel is sufficient to effect a cure. Of thirty cases of chronic sciatica thus treated, Dr. Polli assures us that not one resisted the second employment of this remedy.

Annali Universali di Medicina. Decembre, 1840.

On a Peculiar Morbid Parasitic Formation with specific organized Seminal Corpuscles. By Professor Müller.

The disease here described was first observed in the cellular tissue of the orbit of a young pike, in the substance of the sclerotica, and between it and the choroid. It consists of cysts from one fifth to one half of a line in diameter, with very delicate walls, and containing a whitish substance which is composed of very small granules with molecular motion, and of innumerable corpuscles very like spermatozoa, but quite motionless. These corpuscles have an oval body and a tail. The body has a general resemblance to an elliptical blood-globule, and is about as large as the blood-globule of the pike, like which also it has two surfaces and a thick edge. In its interior there are always at the end opposite to that whence the tail proceeds, two rather long vesicles whose smaller

ends converging at the end of the corpuscle are there united, and thence lying symmetrically in it, gradually diverge to their larger extremities. Besides these vesicles the corpuscles contain a transparent fluid. The tail of the corpuscle is a filament like those of spermatozoa, three or four times as long as the oval part and sometimes bifurcated. It appears to be a prolongation of the wall of the corpuscle; the cavity of the latter is not continued into it.

In the pike, the cysts with such corpuscles as these, are found only in the orbit; but in several other river-fish cutaneous eruptions are sometimes met with, consisting of vesicles with corpuscles differing from those just described, in not being caudate, but resembling them in containing the two oval diverging vesicles; and since his first observations were made, the author has found them in cutaneous eruptions in a number of fish, as well in those of his own country as in those of other parts of Europe, Brazil, North America, the Nile, &c. On the skin the vesicles are most common in the *zander*, (of which the author does not give the Latin name, but which we find translated as the perch-pike;) and in this the mode of development of the corpuscles has been observed, for among a great number of them there are found some which show the two diverging vesicles separated and enlarged, and lying free in the interior of the corpuscle, and other examples in which two corpuscles lie near one another, surrounded by one very pale cell, and presenting each all the characters of the single corpuscles, together with the rudiments of diverging vesicles in each. So that the mode of development of the corpuscles is in all probability this: the diverging vesicles are the germs of new corpuscles; and as they come to be developed they swell up, separate, and lie in pairs within the cavity of the corpuscle, which is transformed into the thin-walled cell containing them. Then as they are yet further developed, the maternal cell dissolves and they become free, each as a separate corpuscle.

The author regards this as a remarkable example of the propagation of a disease by a living *seminium morbi*: it seems to hold an intermediate place between the acknowledged parasitic entozoa and epizoa, increasing by distinct ova, and the cells of ordinary morbid structures increasing by the development of their nuclei, and of one cell within the other.

Müller's Archiv. Heft v. 1841.

On the New Etiology of Tinea. By M. Gibert.

In his last lecture at the Hospital St. Louis, in treating on tinea, M. Gibert referred to the opinion of M. Gruby, of Vienna, that the true tinea—*favus* of Alibert, *porrigo lupinosa* of Bateman—was owing to the development of a sort of mould or parasitic vegetable production, the granules of which are capable of reproduction, and may transmit the disease from one individual to another. Two young sisters presented at the lecture of M. Gibert had some crusts of true tinea on the shoulders and subclavicular region, which, when examined by the microscope, offered the appearance of regular vegetable organization, consisting of small yellowish lobules, some of which were still attached to a fragment of stalk. These young girls had evidently contracted the disease by contagion. M. Gibert is of opinion that we can explain many of the peculiarities of the history of tinea by admitting that it is caused and kept up by a parasitic production, at the same time that the contagion (denied by some moderns, especially by Alibert) is placed beyond doubt. Thus the regular form of the crusts of favus; the transmission by granules which are detached and constitute true vegetable germs; the production of tinea in children and weak subjects in whom the skin is accessible to parasites; the continuity of the disease which is perpetuated by a species of vegetation peculiar to itself; the superposition of the crusts which may be detached from the skin without encroaching upon it, and which are reproduced after a certain time; the necessity of attacking the disease by local means capable of destroying the life of the vegetable parasite, are circumstances all of which may be easily explained by the hypothesis of Dr. Gruby.

It is necessary to distinguish the true *tinea favosa* from the *pseudo-tinea*, as these have been shown by microscopic observers to be entirely distinct species. (See Gibert's Traité Pratique des Maladies de la Peau, pp. 235 et seq.)

Gazette Médicale de Paris. Août 14, 1841.

M. Gruby has since asserted that he has discovered another plant in the bullæ of rupia.

Gazette Médicale de Paris. Août 24, 1841.

On Rheumatic Dermalgia, or Rheumatism of the Skin. By J. H. S. Beau, Physician to the Central Bureau of the Hospitals of Paris.

Neuralgia of the skin has hitherto been usually confounded with pains of the nervous trunks, muscles, &c. M. Piorry was the first who referred it to a separate head under the name of *dermalgia*. It frequently coexists with neuralgia of the nervous trunks, with ramollissement of the brain; or occurs in cases of inflammation of the spinal cord. Severe pain in the uterus is often attended with dermalgia of the skin of the pelvis and thighs, and clavus hystericus is frequently a neuralgic affection of the skin.

There are several other forms of this affection, but one which has escaped notice down to the present time is rheumatic dermalgia. This is of more frequent occurrence among men than women, and is induced by damp, cold, and those other causes to which rheumatism generally is owing. Hence it is most common at the beginning of spring. The head and lower extremities are the parts usually attacked, but the pain is not stationary in one place; often changing its seat in a gradual manner, just as erysipelas sometimes wanders from place to place. Patients experience two kinds of pain, the one abiding, the other intermittent and severe, resembling the prick of a pin or an electric shock, and recurring about every thirty seconds. The abiding pain is frequently little more than a permanent exaltation of the natural sensibility of the skin. Friction of the part with the finger or with the patient's dress, always increases the pain; and if the affected part is covered with hair, very severe suffering may be produced by passing the hand over the hair. The intermittent pain is often at once excited by touching the part in this manner, and though firmer pressure puts a stop to the permanent pain, the return of the intermittent pain cannot be thus prevented. The intermittent pain is always considerably worse at night. Rheumatism of the skin usually alternates with that form of the disease which affects the muscular and fibrous tissues. Its usual duration is from a day to a couple of days, and it subsides by degrees just in the same way as it made its attack. The author met with three instances in which it was accompanied with fever and involved a much larger surface of skin than usual. It is, in general, an affection easily curable. The indications for its treatment do not differ from those to be observed in ordinary rheumatism, but it does not generally require any very active remedial measures. To prevent its recurrence, it is always desirable for the patient to wear flannel next his skin.

Archives Générales de Médecine. Septembre, 1841.

On the Mortality of Leeches after they have been used. By M. Varlitz, one of the assistants in the clinical wards of the hospital at St. Petersburg.

Experiments were instituted during the years 1839-40, under the direction of Professor Zeidlitz, with the view of ascertaining the influence which the blood of man when labouring under different diseases exercises on the health of leeches.

The leeches after being applied to any patient were placed by themselves in a cylindrical glass vessel, with a large mouth, and capable of holding from half a pint to two pints of water. The date of their being placed there, and the disease of the person to whom they had been applied were carefully noted, they

were supplied regularly with fresh water, and were not mixed with other leeches till after the lapse of three months.

The vessels in which they were kept appear to be much more favorable to their health than those made of earth, since only 23 per cent. died when placed in the former, while 90 per cent. died of those which were kept in earthen vessels. Of 455 leeches employed during ten months, from Sep. 1839, to July 1840, 225 or 48 per cent. died, and this mortality is probably almost entirely owing to the noxious properties of the blood they drew, since 50 per cent. died of those who did not disgorge the blood, while the mortality of those who were emptied of blood before being placed in the vessel was much less.

Those who were put by, without being emptied, disgorged the blood sooner or later; most speedily (within the second or third day) when they had been applied to hemorrhoids, or to patients suffering from scurvy, or typhus.

The proportionate mortality of leeches employed in different diseases was as follows:

Of 60 leeches employed in cases of	Typhus	there died	42	= 70	per cent.
176	„ Hemorrhoids	„	72	= 40	„
93	„ Nervous Diseases	„	36	= 38	„
35	„ Pulmonary Phthisis	„	13	= 37	„

Journal de Médecine, &c. de l'Académie Impériale Médico-Chirurgicale de S. Petersbourg. Second Cahier, 1841.

On a Case of Paralysis of the Two Facial Nerves. By M. Constantin James.

The chief interest of this case is its illustration of the antagonism between the muscles of the two sides of the face. The patient was a young and otherwise healthy lady, aged 22, in whom, without any evident cause, there occurred a complete and sudden paralysis of the left facial nerve with all the deformity of the features that usually accompanies it. She was treated by galvanism under the direction of M. Magendie, and at the end of the third week from the first seizure the deformity began to disappear and was shortly altogether lost. This however was not from a cure of the disease, but from paralysis having now seized the right facial nerve, and placed the muscles supplied by it in the same powerless condition as their fellows on the left side. The galvanism was continued on both sides of the face, and in about ten days the nerve of the left side began to recover its energy, and all the deformity returned, the features being drawn completely over to the left side. In ten days more the right nerve also began to recover, and as they now both increased in power, in the same proportion did the features regain their symmetry, till, when both the nerves had acquired their healthy state there was no deviation from the natural expression of the face.

Gazette Médicale. Septembre 18, 1841.

Transmission of Glanders from Man to Man. By M. Berard.

At the sitting of the Institute of France, on November 15, M. Berard communicated the case of a medical student who had been for many days engaged in attending and dressing a patient in the Necker Hospital that had died of glanders, and who, at the p. m. examination, had his hands for a long time in contact with the ulcerated and gangrenous parts about the head and face. He had no wounds or scratches on his hands; but on the night after the examination, having for some little time had slight diarrhœa, he awoke with shivering, which was soon followed by slight fever and general uneasiness. For two days he continued unwell but able to get up, but on the third the pain became more severe, and settled in the left thigh, the right shoulder, and the right side of the chest. On the fifth day, tumours like 'farcy-balls' appeared in the thigh and

shoulder, and some days after, one being opened, discharged pus mixed with blood, which, inoculated into a horse, produced glanders that proved fatal on the same day. Another tumour now appeared over the right ancle and suppurated. And lastly, fourteen days from the beginning of the disease, the skin of the nose became red, hot, and painful; on the fifteenth, the redness had extended to the cheeks, the eyelids, and the middle of the forehead, and gangrenous blisters and pustules appeared here and there upon the face. On the sixteenth day, these signs were yet more marked, and a bloody fluid flowed abundantly from the nose; pustules came out over every part of the body, and the patient died in the course of the night.

This case, M. Berard remarks, proves that glanders may be communicated by miasmatic infection; for the patient had no sore places on his fingers during all the time that he was attending the case from which he received the disease; he neither pricked nor cut himself at the autopsy, and he always took care to wash his hands after handling the infected matter.

[We do not think the miasmatic infection proved. It is certain that persons may be poisoned by animal matters absorbed through the sound cuticle when they have lain long in contact with it; many have been thus affected after dissections in which, with sound hands, they only handled the diseased parts. M. Berard is wrong in regarding this as the first case of glanders communicated from man to man. A nurse at St. Bartholomew's Hospital died of the disease received from a patient there; the case was published by Mr. Brush in the London Medical Gazette, April 24, 1840.]

Gazette Médicale. Nov. 20, 1841.

On the Repeated Application of one or two Leeches to the Knee in Dysmenorrhœa. By M. Trousseau.

In three hospital patients under the care of M. Trousseau the catamenia have followed the application of a leech to the internal surface of the knee. In one case a leech was applied to the right knee; while it held on the patient experienced nothing particular, but as soon as it fell off pains in the loins came on, which lasted almost an hour, and the discharge then appeared. The next day it was arrested again, and a leech was applied to the left knee; and the discharge appeared as before, and continued as usual during three days. In another case the pains of uterine congestion commenced with the application of the leech, which adhered during an hour. The effect produced by one leech is not wonderful, says M. Trousseau, because if the bleeding is allowed to continue, as large a quantity of blood flows as the ordinary amount of menstrual discharge.

Bulletin Général de Thérapeutique. Février 15 *et* 28, 1841.

Case of Hepato-pleuro-bronchial Fistula. By M. Pelletan, Jun.

At the sitting of the Royal Academy of Medicine, March 23, 1841, M. Pelletan presented the lung, pleura, and liver of a man who died under his care in the hospital of St. Louis. Some time before the death of this patient, he began to expectorate a yellow matter, which had some resemblance to bile, but accident prevented it from being analysed. On post-mortem examination it was found that an abscess had broken through the whole thickness of the right lobe of the liver and the diaphragm, and communicated with the pleura, which formed a pouch at this situation. The neighbouring portion of lung was condensed, and a fistulous canal passed through the pulmonary substance and communicated with the bronchial tubes.

Gazette Médicale de Paris. Mars 27, 1841.

SURGERY.

On the Formation of an Artificial Anus. By M. Amussat.

At the Académie de Médecine on the 7th of September, M. Amussat communicated two new operations for artificial anus, which he has performed since the last communication on the same subject in October, 1839. In these two cases the artificial anus was made in the right lumbar region, while in the first two it was made in the left lumbar region: but in all alike without opening the peritoneum. The first of the operations now described was performed on the 3d of July last, on a woman fifty years old. The intestinal canal had been completely obstructed for more than forty days: and now, two months and some days after the operation, the patient is in the most satisfactory state. The second was performed on the 21st of August, for an obstruction of forty-five days' standing, caused by a cancerous affection of the rectum. The patient died ten days afterwards of the progress of the cancer. M. Amussat then related the subsequent history of the two cases communicated in 1839. In the first the artificial anus was made by opening the left lumbar colon, without touching the peritoneum, in a woman forty-eight years old. The constipation was caused by an obstruction of the sigmoid flexure of the colon, and had existed twenty-six days: there was also severe stercoral tympanitis. The patient after having enjoyed pretty good health for a certain time died, five months after the operation, of peritonitis produced by the progress of the carcinomatous disease. In the second of these operations the artificial anus was also made on the left side, in a man sixty-two years old, for an intestinal obstruction consequent on cancer of the rectum. During the two years since the operation was performed, the condition of the patient has greatly improved, and there is reason to hope that the cancerous affection, already much retarded in its progress, will not yet for a long time compromise the success of the operation.

Lastly, M. Amussat communicated a third operation, in which he made an artificial anus last year in a woman forty-seven years old; but, by the method of Littre, opening the cæcum in the iliac fossa. The patient, who was in a state of extreme weakness, died in twenty-four hours, and at the autopsy a stricture (not suspected during life) was found at the angle of union between the transverse and the descending colon.

Reflecting on these operations (says M. Amussat) we see that with regard to the situation to be chosen, the artificial opening has been made in four cases without opening the peritoneum, twice on the left and twice on the right side, and on one other occasion by Littre's plan, on the cæcum. It is reasonable therefore that Callisen's operation, thus modified, should henceforth be performed as one less severe than that of Littre, and which is well calculated to prolong life.

Bulletin de l'Académie Royale de Médecine. Octobre 15, 1841.

On Abscesses in the Substance of the Walls of the Bladder. By M. Civiale.

In these cases the pus may either be infiltrated in the cellular tissue, giving an increase of thickness to the bladder, or it may collect in layers between its membranes, or may be arranged in distinct abscesses varying in size and number. In most instances the abscesses form near the summit and the fore part of the bladder; not, as Chopart says, near the perineal portion. Their diagnosis is very difficult: there is seldom any external tumour, and when there is, its characters are too variable to decide whether there be matter, and whether it be without or in the walls of the bladder. Neither can the existence of an abscess be determined by the occasional discharge of pus; for that may happen when the bladder is sacculated. According to the surface of the bladder nearest which they collect, these abscesses discharge themselves either into the surrounding cellular tissue, or into the cavity. Their formation generally depends on the

irritation of calculi, or on blows or wounds, but sometimes occurs without any appreciable cause. They are not always attended by pain, or by any peculiar disturbance of the functions of the bladder; nor is there any method of examination by which their existence can clearly be discerned. In numerous instances they have been either overlooked, or treated as cases of retention of urine, or imagined to exist when the bladder was only sacculated, or when the pus had collected in the tissue around it, as it does more commonly than in its walls.

[These are the results of M. Civiale's experience in several cases, which are referred to in the original paper.]

Bulletin Général de Thérapeutique. Septembre, 1841.

On an Operation for the Cure of Myopia and the disposition to fatigue of the Eyes. By M. Bonnet, of Lyons.

The author believes that certain forms of these affections depend on too great an energy of the muscles of the eye-ball, which, by pressing too forcibly on it, either elongate its axis, make the cornea prominent and produce myopia, or after a time render it painful and incapable of being longer used in the examination of small bodies. Believing this, he thought that the appropriate remedy would be found in removing some of the excessive pressure by dividing one or more of the muscles; and that chosen for the purpose was the inferior oblique. The results of ten cases in which the operation was performed are briefly given. In no case was it followed by any ill consequence; in all, with one exception, the distance of distinct vision for reading (after both inferior oblique muscles had been cut) was, on an average, nearly doubled, and that for seeing larger objects, such as for the recognition of features, was rendered three, four, or even five times greater than it was before. In all, moreover, with one exception in which there was only an improvement, the tendency to fatigue of the eyes after a moderate use of them, was completely removed.

Gazette Médicale. Septembre 4, 1841.

Extirpation of the Submaxillary Gland. By M. Colson, of Noyon.

It has been questioned, especially by M. Velpeau, whether this operation was really ever performed, or whether the supposed diseased salivary gland was not in each case merely a diseased submaxillary absorbent gland. In the present case the evidence of its having been truly the submaxillary gland which was removed seems nearly complete. The patient was 65 years old, and had had for eleven years a cancer of the lower lip which had been treated by a variety of caustics. At the time of the operation this was as big as a large nut and was ulcerated extensively; and there was besides, towards the right side of the base of the lower jaw and below it, a lobulated tumour, which was supposed to consist of enlarged absorbents. After removing the cancer of the lip, the author proceeded to this tumour, but was astonished to find that it was situated much more deeply than he had expected, and that, in the removal of it, it was necessary to divide the lingual branch of the fifth nerve, and the submental artery; and to expose the facial artery, the digastric, stylo-hyoid and mylo-hyoid muscles, and the hypo-glossal nerve. The operation was with much difficulty accomplished, and the tumour when removed was found to consist of the submaxillary gland (which was recognized by its being still inclosed in its fibrous capsule) and of a few enlarged, but not otherwise diseased, absorbents. The gland was converted throughout into encephaloid tissue, which was in parts softened and nearly fluid; it measured an inch and a half in one direction and about an inch in the other. The patient rapidly recovered from the operation, and eight months after remained perfectly well.

Annales de la Chirurgie. Aout, 1841.

Cure of slight degrees of Squinting without Tenotomy. By Dr. DIEFFENBACH.

WHEN the strabismus is but slight it often happens that after the division of one of the recti, its antagonist draws the eye too far in the opposite direction, and produces a strabismus only different in kind from that which existed before the operation. For these cases, therefore, Dieffenbach proposes, instead of dividing the muscles on the side *towards* which the eye squints, to cut out a portion of the conjunctiva from over the insertion of the muscle of the side *from* which it squints. The operation consists merely in raising up a fold of conjunctiva several lines wide with a pair of hooks, and cutting it off, with some of its subjacent cellular tissues, with a pair of curved scissors. The contraction of the cicatrix is sufficient to draw the eye into the straight position. In external strabismus, a larger portion of conjunctiva must be cut from over the internal rectus, than in cases of internal strabismus it is necessary to cut from over the opposite muscle; because the former kind of strabismus almost always depends on weakness, the latter on excessive energy of the rectus internus.

Casper's Wochenschrift. September 4, 1841.

On the Treatment of Old Fractures by Division of Tendons.
By Dr. DIEFFENBACH.

DIEFFENBACH has several times, in old cases of fracture of the patella or the olecranon, where the portions were dragged far apart, divided the adjacent tendons so as to be able to bring the portions together and, by friction of them one upon the other, to excite such action as might end in the formation of a shorter and firmer bond of union. In some cases considerable benefit was obtained after all other means had failed; in others the result was negative. Two examples are detailed; in one, an old ununited fracture of the ulna, he divided the tendon of the triceps, fixed the upper portion of the bone in its right place by a bandage, and every fourteen days rubbed it well against the lower one: in three months the union was firm. In another example, an old distantly united fracture of the patella, he divided the ligamentum patellæ and the rectus femoris about three inches above the patella; then, by an appropriate bandage and constantly drawing the separated portions more closely together, he obtained at the end of some months a complete hardening of the interposed substance, and a considerable amelioration of the patient's state.

Casper's Wochenschrift. October 2, 1841.

On the Contagious Properties of Gonorrhœal and Blennophthalmic Matter.
By Dr. DECONDÉ.

THE object of this memoir is to describe the experiments, of which the results were detailed in a former one, and by which it was proved that gonorrhœal matter would always produce purulent ophthalmia in dogs, unless it were applied very soon after the urethra had been washed by irritant injections, such as solutions of nitrate of silver.

The numerous experiments now briefly detailed were instituted on the eyes of dogs, and in many instances on those of the author himself. They afford very strong evidence, 1st, that fluid from a urethra into which nitrate of silver has on the same day been injected, will neither produce gonorrhœa in man, nor granular ophthalmia in man or dogs; 2d, that if the same kind of fluid be mixed with a small quantity of chloride of lime it loses the whole of its contagious property, and does not regain it even after the evaporation of all the chlorine from it; 3d, that it is just the same with the purulent fluid of contagious ophthalmia, so that if within a few seconds of the contact of some of it with the conjunctiva, a small quantity of chloride of lime in solution be inserted within the eyelids, the contagion is entirely prevented, which if the remedy be not almost immediately applied, is sure to manifest itself.

Annales de la Société de Médecine d'Anvers.
L'Examinateur Médical. Octobre 24, 1841.

On a rare kind of Stony Concretions in the Skin. By Dr. Julius Vogel.

J. W., a baker, 33 years old, had always enjoyed good health. In his fourteenth year, without any obvious cause, he was affected with a severe itching in the scrotum, which lasted a long time. It gradually ceased, but there then formed in the scrotum a number of small nipple-like elevations, which gradually enlarged till they acquired the size of a pea or a hazel nut, and then dried and wasted; but had scarcely dried in one part of the scrotum before similar tumours appeared in other parts. Since his fifteenth year he has constantly suffered from these tumours, which dry up and appear again at irregular periods, but which have never given him so much annoyance as to lead him to seek to have them cured till now, when he wants to marry.

The scrotum is not enlarged, but is beset with a great number of round tumours of the sizes just mentioned. They cover the whole scrotum and are about 150 in number; the skin upon and around them has its ordinary colour and appears quite normal; they are situated in or immediately beneath the corium, and are freely moveable; they are tolerably firm and give no pain.

One of these tumours was punctured with a lancet and its contents were pressed out. The substance obtained was greasy, white, and of the consistence and aspect of clotted milk; it felt soft and was just like the contents of an atheroma. Under the microscope it appeared like a granular amorphous substance, of a brown colour, with numerous colourless portions of crystals which were for the most part rounded and had no definite form. It contained no organized structures. Chemically examined it was found to consist chiefly of phosphate and carbonate of lime, with a trace of a salt of soda, and a small quantity of fat and extractive matter.

To see whether the opinion of Voigtel (who has described a similar case) were correct, that these concretions are formed in the sebaceous glands, Professor Stromeyer (under whose care the patient was) cut one of the tumours out and gave it to the author to examine; but all the tissues were so encrusted with the earthy matter that he could obtain no definite result, though he saw enough to make him think Voigtel's view very probable.

Neither the cause, nor the mode of production, nor the best mode of treatment of this disease, are at present more than obscurely known.

Allgemeine Zeitung für Chirurge innere Heilkunde und ihrer Hülfswissenschaften. Nr. 1. *Juli* 10, 1841.

Fatal Stab of the Brain. By Dr. Keyl, Regimental Surgeon.

The chief interest of this case which is given at great length in the Public Reports, lies in the absence of immediate symptoms in consequence of a severe injury of the head. A drummer was stabbed in the left temporal fossa, with a common clasp-knife. The wound bled a good deal, but after washing it with the help of his comrade, he went home to his quarters and slept well all night. Next day he remained very well, and in the afternoon at the hospital, he complained of only a slight pain in the wound, which, as it did not seem of much importance, was covered with simple dressing. On the day following he still remained perfectly well in his intellects and in his general health; and it was not till the sixth day after he received the wound, that symptoms of inflammation of the brain set in. Of these, in six days more he died.

On examination it was found that the knife, after traversing the temporal fossa from above downwards, and from before backwards, had passed obliquely through the squamous portion of the temporal bone, (in such a manner that it could not be discerned during life till the wound was dilated,) and had then penetrated to an equal extent the dura mater, the inferior part of the posterior lobe of the cerebrum, the tentorium cerebelli, and the left lobe of the cerebellum in which it had passed as far as the arbor vitæ. All these parts now showed signs of having been acutely inflamed.

Medicinishe Zeitung. *Juli* 21, 1841.

Researches on Puncture of the Bladder. By M. MONDIERE.

IN this paper the author cites 92 cases of puncture of the bladder, the results of which may be arranged in the following manner:

	Puncture			Total
	perineal	recto-vesical	hypogastric	
Number of cases	9	28	55	92
Success	6	19	49	74
Fistula	1	3	0	4
Infiltration	0	3	0	3
Abscess	0	1	0	1
Hemorrhage	1	0	0	1
Death	1	2	6	9

Gazette Médicale de Paris. 21 *Aout*, 1841.
From Revue Médicale. *Avril*, 1841.

On Paralysis of the Muscles of one side of the Face, and Division of those of the opposite side. By Dr. DIEFFENBACH.

IN two cases met with many years ago, the author, to remedy the extreme deformity of paralysis of one side of the face that had existed many years, cut a considerable portion of skin out of the cheek of the paralysed side, and stitching the edges of the wound together, contracted the part and considerably improved the patient's appearance. However he was not satisfied with this operation, and finding that in all such cases the unresisted healthy muscles became rigid, like some of those of the leg, in paralytic club-foot, he determined on dividing them by subcutaneous incision. He made his first essay in an old case of paralysis of the orbicularis palpebrarum; he divided the levator palpebræ by passing a very narrow knife under the skin of the upper eyelid and cutting downwards on a piece of wood put between the lid and the globe; the result was striking, for the eyelid instantly closed and opened again; it closed because the paralysis was not complete; it opened because some fibres of the levator had intentionally been left undivided. In three other cases the result was equally remarkable and successful; and in none of these did any serious effect follow; but in a fifth case the eyelid became acutely inflamed, ulcerated, was perforated, and required an autoplastic operation to remedy the mischief. In a number of cases more, Dieffenbach has since divided all the muscles of one side of the face (in the same manner as he does those which in another class of cases are spasmodically convulsed), and in a great majority of them the operation was more successful than could have been expected. The contracted unresisted muscles were instantly so enervated that the overpowered ones of the other side at once began to act again; and even in the very oldest and worst cases, where the paralysed cheek was completely atrophied and hung down in a pouch, a considerable improvement of appearance was obtained.

Medicinische Zeitung. *September* 15, 1841.

On the Application of the Subcutaneous Method to the opening of Chronic Abscesses. By M. JULES GUERIN.

IT is generally admitted that the fatal termination of psoas and other abscesses of the like kind is due to the effects of the admission of air into their cavities, and various, but for the most part insufficient, methods have been proposed at different times to prevent that accident. M. Guerin's plan is as follows: he uses a flat trocar, long, but of small diameter, and enclosed tightly in a canula. The canula is furnished with a cock near its larger end, which, when open, permits the trocar to pass, but, when shut, exactly closes the canula. The outer end of the canula fits on the nozzle of an ordinary syringe, and all those parts are so adapted that no air may pass where they fit one to the other. A fold of skin being made at some little distance from the abscess, the trocar and

canula are introduced at its base, and carried under the integuments till the point of the former has entered the sac; then the trocar is slowly withdrawn (an assistant gently pressing the walls of the abscess,) and at the instant that its point passes the cock, *that* is turned and the pus prevented from flowing out. The syringe is now adapted, the cock turned back, and the pus sucked out of the sac at once, or with one or more emptyings and refillings of the syringe, if its quantity be very large. When this is finished the canula is slowly withdrawn, care being taken to keep the walls of the track through which it passes close together. A pad and bandage are then put on the sac, and the track leading to it, and the orifice of the latter is closed with sticking plaster.

Such is an outline of M. Guerin's plan, to which he has added lengthened details, most of which will at once suggest themselves to an ingenious operator. His experience of its effects are, that he has employed it "eleven times in opening abscesses by congestion, the consequences of tubercular affections of the bones, and eleven times in opening cold abscesses properly so called, and in no case has he observed any local or general accident that could be referred to the operation." It is not pretended that the method cures the diseases on which the abscesses depend, but only that it obtains all the advantages of evacuating the pus without any of the dangers of the older operations.

L'Examinateur Médical. Septembre 19 *et* 26, 1841.

On the Curative Influence of Galvanism in some Organic Diseases of the Eye.
By Drs. Lerche and Kabat.

In the last number some account was given of this mode of treatment: the two papers before us contain notices of seven more cases of cataract in which it has been tried. The result appears on the whole unsatisfactory. The common effect of the electro-galvanic action is to produce during the operation considerable pain, and subsequently severe and sometimes very obstinate inflammation of all the tissues of the eye. In the course of this the cataract has been in some cases partially absorbed, and the sight in a measure improved; but the attainment of these, the most favorable of its results, cannot be relied on, and in some of the cases the operation manifestly did harm. Dr. Lerche's conclusion, which is of course drawn with some partiality for the plan, is, "that it is an important remedy in some organic diseases of the eye, but that its application requires great caution, and must be confined to those cases of cataract in which a favorable result is scarcely to be hoped for from the common modes of operation."

Medicinische Zeitung. September 1 *&* 8, 1841.

On the Cure of Obliquity of the Nose by Subcutaneous Division of the Cartilage.
By Dr. Dieffenbach.

This condition of the nose which, however common in a slight degree, is, in an extreme, remarkably ugly, has been twice cured by Dieffenbach. The patients were young persons about 20 years old. In one the obliquity was congenital, in the other the consequence of a fall; in one the nose was turned to the right, in the other to the left, and in both to such an extent that it was thrust completely out of the middle of the face with its point turned towards the cheek, and the nostrils lying almost one over the other. The operator ran a small knife through the skin on the side of the bridge of the nose where the cartilaginous and osseous parts meet, and carried his incision so as to separate from the bone the bridge of the nose, one of its lateral walls, and a flap beneath the skin. Then through another puncture on the other side just under the bridge, he divided in the same direction the cartilage and the septum. The nose could now be without difficulty put right; compresses kept it so; no ill consequences followed; and shortly the patients were both so much improved that they could barely be recognized.

Casper's Wochenschrift. September 18, 1841.

On the Effects of the Absolute Repose of Joints, without previous Disease.
By M. TEISSIER, of Lyons.

TEMPORARY or permanent stiffness of a joint, it is well known, is a frequent consequence of its being maintained for a length of time in the same position. The chief object of the author is to prove by examinations of the dead body, that the morbid changes produced are more serious than is generally supposed. They are, he says, besides the muscular rigidity which always follows rest, effusion of serum and blood into the articular cavities, vascular injection of the synovial membranes, formation of false membranes, alterations, such as softening, roughness, and absorption of the cartilages without adhesion of the articular surfaces, and sometimes complete anchylosis. Of all these changes he has seen examples in the limbs of those who have been long confined with fractures; and this not only in the joints near the seat of fracture but in those of the same limb most distant from it; for instance, in the tarsal and metatarsal joints of limbs in which the femur had been broken. In nearly all cases the changes take place without pain or any other symptom of disease.

[The morbid changes which the author describes do not seem referrible to any other cause than that to which he ascribes them, however improbable it may seem that mere rest of a joint should give rise to such changes as are commonly produced by inflammation. M. Ricord and M. Cloquet have seen similar changes in some cases of complete local paralysis.]

Gazette Médicale. Sept. 25 *et Oct.* 2, 1841.

Case of Fistula of the Larynx, with complete Closure of the Tube above it.
By M. REYNAUD, of Toulon.

A MAN, twenty-eight years old, cut his throat so as to divide the anterior surface of the pharynx, the posterior and lateral parts of the cricoid cartilage just below the inferior cornua of the thyroid, the crico-thyroid membrane, and all the soft parts in front of it. As the wound healed his breathing became gradually more and more difficult, and to relieve himself he cut all the same parts again to a somewhat less extent. As they again healed the same dyspnœa returned, and now he wore a tube in the trachea; but one day the end of it fell into the bronchus, and being taken into the hospital for its extraction he came under the observation of the author, who found that the larynx above the fistula was so completely closed that neither water nor mercury poured through the glottis came down to the fistulous opening. After death, which was produced by repeated attacks of bronchitis, it was found that the integuments which had fallen in at the upper part of the wound, and the pharynx which had been drawn forward, were united so as to form a complete oblique partition just below the thyroid cartilage. The glottis was small, but healthy.

The most singular fact in this case was that, though he had lost his voice, the man could speak with sufficient distinctness to be plainly understood at a distance of four feet. He had great difficulty in pronouncing the letters *a, e, l;* still more in pronouncing *o;* and *m* and *n* were quite impracticable. When he wanted to speak he opened the mouth, depressed the pharynx, and after having filled the vocal tube with air, suddenly elevated the larynx and spoke by jerks, as if he were expectorating, always leaving a little interval before the pronunciation of each word. His pronunciation, though distinct enough to be understood, was not clear; nor could he, without much fatigue, maintain a long conversation. He could whistle a little, blow his nose, spit, and sneeze; but all these he did with difficulty, by a sudden and violent elevation of the larynx, after having inspired deeply.

[The details of this case, even in the longer memoir from which the above abstract is made, are too imperfect to teach all that might have been learnt from them; it is not even mentioned what sound was made in speaking, whether it were a mere whisper or more. The impossibility or difficulty of sounding the letters mentioned, renders it nearly certain that no air was ever made to pass

through the glottis. It is probable that the violent elevation of the larynx, and with it the thrusting forward of the upper part of the pharynx and the fauces, were sufficient to impel the air in the mouth with force enough to be formed into the sounds of the different letters by the tongue, teeth, and lips. The chief result of the case therefore is to show for what articulate sounds the glottis is necessary.]

Gazette Médicale. Septembre 10, 1841.

On Division of the Muscles of the Face when affected with Chronic Spasms. By Dr. Dieffenbach.

Three cases (in addition to one detailed in our review of the author's work in the present Number, p. 22), have been operated on, and in all the results were completely successful. The disease had in all the patients existed for several years, and affected in all a number of the muscles of one side of the face, so that the eye was often violently closed, and the angle of the mouth involuntarily pulled up or downwards. To divide the orbicularis palpebrarum sufficiently, three subcutaneous incisions were necessary, one upwards, a second downwards, and a third outwards. They were all made with a fine curved knife, run in at the level of the outermost fibres, carried to the edge of the tarsal cartilage, and in withdrawing it made to cut through the whole breadth and thickness of the muscle, and down upon a thin layer of wood with which the eye-ball was defended. The section through the cheek extended from the ala of the nose to the anterior border of the masseter; the knife being passed in at the latter place and carried with its back just under the skin to the former. To divide the muscles of the angle of the mouth, a similar section was made from it obliquely downwards to the lower edge of the lower jaw.

The immediate result of the operation was cessation of the spasmodic contractions, either complete, or so as to leave but a slight vibration. Pads of charpie strapped down pretty firmly were necessary to limit the hemorrhage under the skin, but no severe symptoms ever followed, and within a few days every one of the patients was thoroughly well.

Medicinische Zeitung. September 15, 1841.

On a New Mode of Treating Tinea Favosa. By M. Petel, of Louviers.

The treatment of the cases of tinea in the Hôpital des Enfans Malades at Paris is intrusted to the Messrs. Mahon, who have obtained great success by the employment of some secret remedy.

M. Petel's object has been to arrive by some rational mode at results similar to those obtained by the Messrs. Mahon, whose secret remedy, in common with many other nostrums, has the effect of producing the separation of the hair; an effect usually regarded as indispensable to the cure of tinea. The grand aim was to arrive at the knowledge of some good depilatory process, and in imitation of MM. Mahon, M. Petel has composed an ointment and a powder.

The ointment consists of

			Avoirdupois.
Common soda	60 centigrammes	=	about 9 grains.
Slacked lime	4 grammes	=	,, ʒj.
Lard	120 ,,	=	,, ʒij.

The powder is formed of

Quick lime	120 ,,	=	,, ʒij.
Powdered charcoal . . .	8 ,,	=	,, ʒij.

When a person applies who is affected with tinea, M. Petel orders the hair to be cut about a quarter of an inch from the skin; he then gets rid of the crusts by poultices, and frequent washings with soap and water. At about the sixth day he commences the employment of the ointment which is repeated daily, the

head being kept clean by means of a fine comb, which should be greased, and by frequently washing it with soap and water. The reproduction of the favous crusts gradually ceases, though frequently six weeks are required for that purpose; and when that object has been accomplished M. Petel sprinkles some of the powder among the hair every other day. The hairs by degrees lose their adherence to the scalp and may be pulled out without putting the patient to any pain.

When all the hairs have been removed nothing more is requisite than to apply the ointment daily until the hair has regained its natural colour.

M. Petel says that this mode of treament has been followed by great success; it seems, however, far inferior to the plan recently adopted by M. Devergie, at the Hôpital St. Louis, of applying certain caustics to the favi. A solution of acid nitrate of mercury of the Paris pharmacopœia was applied with a brush to the favi in a very aggravated case, in which the disease occupied the posterior part of the head. The favi immediately assumed a reddish-yellow colour; they fell off on the fifth day, leaving healthy skin beneath, and did not reappear.

A caustic solution of iodine was employed with similar success in two other cases. The observations of M. Gruby, with reference to the vegetable nature of the favi, led to a trial of these applications, which need to be employed more extensively in order to confirm the favorable results obtained from their use in a few cases.

Bulletin Général de Thérapeutique. Octobre, 1841.

On Strangulated Herniæ. By M. MALGAIGNE.

THE object of this long memoir is to prove that the condition upon which the symptoms depend, and to which the treatment must be directed, in what is called strangulated hernia, is in many, and perhaps in the majority of cases, a simple inflammation of the sac and its contents. This, the author holds, is especially true in large and old intestinal herniæ, which have never been kept up by a truss, or where the truss has been long left off; in these there is never any strangulation, for the ring or rings are always larger than the pedicle of the hernia requires. In pure epiploceles also, he says, strangulation has never yet been proved to exist; their being irreducible depends on an adhesive or suppurative peritonitis having taken place, and giving rise to the symptoms. In both these classes of cases the operation is irrational and mischievous; and in general, the advice which the author urges is a delay of the operation (unless there be almost certain evidence of strangulation) till the measures calculated to produce inflammation have been employed. These, in some cases, remove the symptoms, though the hernia may itself appear unaffected; in many others they render reduction easy, which was before impracticable.

These conclusions are supported by the recital of some striking cases, and by references to a great number more. Enough is proved to render it certain that, in many cases which would commonly be operated on, the liberal application of leeches, cold, and other treatment adapted to the peritonitis, may prove sufficient for their perfect cure; and that in all, the inflamed state of the sac and its contents deserves more attention than it commonly receives.

Archives Générales de Médecine. Octobre et Novembre, 1841.

Statistical Researches on Dislocations. By M. MALGAIGNE.

THE results in this memoir (which is supplemental to one of the same kind on fractures), are drawn from an examination of the records of the Hôtel Dieu during a period of sixteen years, in which 530 dislocations were entered as seen or admitted. Although the records were not always carefully kept, yet there is sufficient harmony in the general results to render it probable that they are true. The following are the most interesting among them:

Dislocations are one fourth more numerous in the first and last quarters of

the year than in the second and third; and their increased number is always in cold weather in a greater proportion than that of fractures is. In relation to age, dislocations are very rare in early childhood, thence, gradually become more frequent to the 15th year; thereafter rapidly increase in frequency, and then again slowly become more common up to the age of 65, after which they seemingly become more rare. But, taking the proportion of those who suffer dislocations to the whole number of the population, it becomes regularly and considerably greater from the 15th year to the end of life; and in comparison with other ages, old age is less subject to fracture than to dislocation; in other words, as age increases, the liability to dislocation increases more rapidly than the liability to fracture. In young people dislocations, like fractures, are more common in summer that in winter; in old people the reverse holds. Men are three times more liable to them than women are. The limbs of the right side are more often dislocated than those of the left, in the proportion of five to four. Of the whole number of dislocations those of the humerus constitute at least two thirds; those of the lower extremities one eighth; and the proportion of the dislocations of the humerus to the whole number, regularly increase with advancing years, so that whilst it is only a quarter before the age of 15, it is four fifths after that of 55, and six sevenths after 70. Next to dislocations of the humerus those of the clavicle are most frequent, and they are especially so in manhood: then come the dislocations of the femur, and then those of the elbow, both of which also are most common between the ages of 25 and 40. The number of fractures that occur is altogether about six times as many as that of dislocations; but fractures of the humerus are very little more frequent than dislocations of it, while fractures of the femur are more than as fifteen to one case of dislocation, those of the clavicle as nine to one, of the fore-arm as twelve to one, and of the leg as 100 to one.

Annales de la Chirurgie. Octobre, 1841.

MIDWIFERY, AND DISEASES OF WOMEN AND CHILDREN.

Account of a Case of Physometra. By Dr. L. Ercoliani.

A young lady who had suffered much from hysteria and irregularities in menstruation, though otherwise she enjoyed good health, married when she had attained her twentieth year, and soon became pregnant. During pregnancy she suffered much from sickness and various nervous sensations, but her labour was attended by no accident, and for the first twenty-four hours after her delivery she appeared to be doing well. An attack of puerperal peritonitis then came on, which was treated actively by depletion and antiphlogistic remedies, and all the local symptoms subsided in the course of ten or twelve days. A degree of fever, however, still continued; for the removal of which the antiphlogistic plan was still persevered in, though, incessant vomiting having supervened, it was no longer possible to administer medicines by the mouth. Two months passed thus, the patient being occasionally somewhat better, but still labouring under a slow fever with exacerbations every evening, and becoming daily more and more emaciated. The uterus now began to enlarge, but without pain, or increase of the patient's general sufferings. Various remedies were tried, but without success, to allay the sickness; leeches were applied to the uterine region and a small dose of calomel had the effect of salivating the patient, whose illness had now lasted for four months. An attack of extremely severe pain in the abdomen now came on, lasting with brief intervals for two days and a half. During its continuance the patient shrieked with pain, and sometimes fainted from its severity. Each paroxysm was followed by the discharge of a small quantity of black fæces, but the sphincter ani seemed paralysed and injections thrown into the rectum returned immediately. At length an enema was retained, and the patient's sufferings almost immediately ceased.

Two days afterwards a considerable discharge of air and water took place from the uterus, and the patient was conscious of a constant escape of air between her thighs. The uterus diminished in size, the fever subsided and appetite returned. Within a month the lady was able to leave her room, but air still continued to issue from the uterus, and was often accompanied with a discharge of water. Water at length ceased to escape from the womb, but the escape of air continued for two years and a half, when the patient once more became pregnant. She had but very indifferent health while pregnant, but her labour was easy and her recovery rapid. During the flow of the lochia, however, the physometra, which had ceased during the last six months of pregnancy reappeared. From that time to the date of Dr. Ercoliani's report, two years had elapsed, during which time air still continued to escape from the uterus in various quantities, and at different intervals. This occurrence takes place at all times of the day, but especially in the morning; it is increased by the operation of purgatives, by mental excitement, or by sexual intercourse. The air which escapes is perfectly devoid of smell; the health of the lady is perfectly good, with the exception of occasional hysterical symptoms, and attacks of pain in the abdomen; which, however, are far less severe than those which she used to suffer before her second labour.

Dr. Ercoliani is disposed to think, that as a temporary occurrence the escape of air from the uterus, especially during the puerperal state, is by no means so rare as might be supposed from the little notice taken of it by most writers on the diseases of women.

Annali Universali di Medicina. Decembre, 1840.

Account of a General Eruption of Vaccinia observed at the Hospital Cochin. By M. F. Aubry.

The instances are very rare in which an eruption of the pustules of vaccinia takes place at a distance from the spot where the lymph was inserted. The case related by M. Aubry is that of a female infant, who was vaccinated when a week old, three punctures being made in each arm. Vaccination was performed on July 3, 1841; on the 10th, virus was taken from her arm in order to inoculate other children. Several small papulæ were observed on her body on the 10th of July; and on the 15th eleven pustules, closely resembling those of the cow-pox, were seen on her abdomen and lower limbs. These pustules were of a flattened form, of a yellowish white colour, perfectly circular, with a slight depression in the centre, and surrounded by a bright red areola. The character of the eruption changed rapidly, and some of the pustules presented the brown scab, but this was not the case with all. The question of the nature of these pustules, however, was soon set at rest by vaccinating a child from them, when pustules were produced which underwent precisely those changes which are characteristic of chickenpox.

M. Cazenave denies that the pustules which occur on the body of patients who have been vaccinated are real vaccine pustules, except in those cases in which they have been produced by the person inoculating himself by scratching the skin of some part, with his fingers accidentally moistened with vaccine lymph from the parts where the puncture was made. But it cannot be supposed that in this case all the eleven pustules were thus produced, and we must therefore admit the possibility of a secondary eruption of vaccinia consequent on the absorption of the virus into the blood from the place where it was inserted. Nevertheless, it is probable that in the greater number of instances in which this has been supposed to occur, the eruptions observed were either varicella, or some varioloid eruption modified by vaccinia.

Archives Générales de Médecine. Sept. 1841.

On the Performance of Tracheotomy in the last stage of Croup.
By M. Petel, of Cateau.

The object of this paper is to recommend the performance of the operation even in the last stage of the disease, a period when all other remedies are invariably useless. M. Petel has adopted it in six cases, in three of which the patients recovered, though five days had elapsed in one instance and ten in the other from the outbreak of the disease, and both patients were almost *in articulo mortis*. In every case warm water was thrown into the trachea after the operation several times, always with the effect of facilitating the discharge of mucosities. In one of the cases followed by recovery, a solution of 20 centigrammes of nitrate of silver to 4 grammes of water (about gr. iij. to ʒj.) was dropped into the air-passages, in the other calomel was blown into the trachea. The solution of nitrate of silver was likewise employed in two of the cases which terminated fatally. The subject of the fifth observation had been suffering from croup for eight days when tracheotomy was performed; the patient's life was saved by it, the wound in the trachea healed, and she survived six weeks after the operation, when she died suddenly in the night.

In performing the operation, M. Petel considers it to be inexpedient to delay opening the trachea on account of hemorrhage, provided the patient seems in a state of impending suffocation. His reasons for this advice are, 1st, that the hemorrhage is usually venous, and ceases almost immediately on the trachea being opened, while in the patient's semi-asphyxiated condition the colour of the blood affords but little clue as to its origin. If the hemorrhage be arterial, the vessel is usually of such small size that the bleeding can be checked by the application of nitrate of silver. And, 2d, blood which enters the bronchi does not, as is commonly supposed, occasion any serious consequences, but is expectorated as readily as the mucus which collects in the air tubes, or the fluids which may be injected into them.

Journal des Connaissances Médico-Chirurgicales. Octobre, 1841.

On Myelitis Infantum. By Dr. Schlesier.

Dr. Schlesier has had two opportunities of observing this disease, both times in female children between three and four months old. After some days of general indisposition, the children became extremely feverish, and this fever presented frequent though irregular remissions and exacerbations. Children thus affected lie on the back, and cry if any one moves them from that position. Their dread of quitting it indeed is so great, that if taken in their mother's arms they refuse the breast, though they suck with avidity if the mother stoops over them so as to give them the breast while in the recumbent posture. The muscles of the neck and back now become stiff, the child anxiously avoids every movement. Muscular tremors come on, especially affecting the upper extremities, and the flexors more than the extensors. These convulsive movements gradually involve the whole body, twitchings of the face and of the upper extremities are constant, and the head is fixed perfectly stiff. An attack of convulsions with opisthotonos comes on, lasting five or six minutes, and returns after the lapse of six or eight hours. By degrees these attacks increase in severity and frequency; in the intervals the children lie in an apathetic state, whimpering rather than crying, but never obtaining any sleep. During the continuance of the disease, which lasts for some days, the bowels are costive, the urine scanty, and the fever considerable. At length copious sweats break out on the head, and during some fit more severe than the others the child dies.

Dr. Schlesier examined the cervical portion of the spinal cord of one child, the parents not allowing him to make a complete post-mortem inspection. He found considerable redness of the arachnoid and pia mater, and a copious exudation of lymph between the two membranes. The venous plexuses were loaded with blood, and the substance of the cord was softened and presented a dirty yellow colour.

Medicinische Zeitung. Sept. 8, 1841.

On the Employment of the Plug, as a Means of Inducing Premature Labour. By Dr. Schöller.

Two modes of producing premature labour are resorted to at the present day. Either the membranes are punctured, or a tent of sponge is introduced into the os uteri as recommended by Professor Kluge. The former method is liable to the objection of causing the too rapid escape of the liquor amnii, and thus endangering the life of the child when labour-pains are tardy in their occurrence. The second is often extremely difficult to accomplish, or even impossible when the os uteri is directed very much backwards, or when the patient has never before been pregnant.

Dr. Schöller was led to try the plug, from having observed that when used to suppress hemorrhage in cases of placenta presentation or of threatening abortion it had a considerable influence in exciting uterine action. He had observed also one case where its employment to restrain hemorrhage was followed by premature labour which it seemed to have occasioned. He recommends filling the upper part of the vagina with balls of charpie, which, for the sake of cleanliness should be renewed every twenty-four hours. The action of the uterus is usually very speedily excited, and when fully established, the plug may be withdrawn and secale cornutum administered to prevent the diminution of labour-pains. The finger may likewise be used to aid the dilatation of the os uteri, but great care must be taken to leave the membranes uninjured. Five cases are related in support of this practice. In four the child was born alive, but in the fifth, in which the breech presented, the infant was still-born. The average length of time which elapsed between the application of the plug and the birth of the child was five days and fourteen hours.

Medicinische Zeitung. August 18 and 25, 1841.

Account of an Epidemic of Trismus Neonatorum, which occurred in the Lying-in Hospital at Stockholm in the year 1834. By Prof. P. G. Cederschjöld.

Before the outbreak of the disease, sporadic cases of convulsive affections had been met with among the infants, putting on sometimes the form of trismus or tetanus, at other times differing but little from ordinary convulsions.

The commencement of the epidemic may be referred to the month of February, 1834, when one child was attacked by the disease. Three cases occurred in March, and two in April; but from the 8th of April to the 24th of May, the disease did not again show itself. From the 24th of May, however, to the 23d of June, 16 children were attacked by trismus, of whom 9 died. Another interval of 10 days elapsed without any fresh cases appearing; but between the 3d and 14th of July, three children died of trismus, and between the 14th and 21st, nine more infants were attacked and five died. After this time the cases of the disease became much less frequent, though it did not finally disappear until the 15th of November.

During the continuance of the epidemic 42 children were attacked by the disease, of whom 34 died, but it is probable that some of the cases reported as cured were not in reality instances of the disease, since no child recovered in whom the symptoms of trismus were at all well marked. Professor Cederschjold attributes the prevalence of the disease epidemically during the months of May, June, and July, to the great variableness of the weather; but the circumstance of its not having occurred among the children of women delivered at their own homes, renders it probable that it was owing to some local cause.

The first symptoms usually appeared between the 4th and 6th day after birth, and the duration of the disease seldom exceeded two days. When attacked, a child became uneasy, cried aloud sometimes, and did not suck, though it was eager to take the breast. A slight convulsive movement was next observed about the lips, drawing apart the angles of the mouth. A convulsive seizure would next follow, sometimes resembling an ordinary convulsion, but at other

times attended with trismus or tetanus. The alternation of trismus with general convulsions was frequently observed, but tetanus and convulsions were not nearly so often combined. Three periods might be observed in the convulsive attacks: the first was attended by symptoms of suffocation; during its continuance the whole body was stiff, and the face livid; convulsive movements, especially of the face and eyes, succeeded, and the livor disappeared; the third stage then came on, during which the child foamed at the mouth, and breathed difficultly and with a snoring sound. The attacks of tetanus occurred at longer intervals than those of convulsions; they were attended with opisthotonos, but seemed to exhaust the infants less than the convulsions.

Great congestion of the membranes and substance of the brain and spinal cord were found after death, and sometimes an extravasation of coagulated blood at the base of the cranium. The lungs were much collapsed, and often appeared to have been only incompletely inflated. The liver was usually much congested, and the gall-bladder distended.

The treatment consisted in the application of leeches to the nape of the neck, the administration of nauseating doses of emetics, and the use of antispasmodics and opium. Mild purgatives followed by antispasmodics seemed to be beneficial in some cases where premonitory symptoms of the disease had appeared, and laxatives, with the separation of the sick from the healthy, were employed as prophylactic measures.

Neue Zeitschrift für Geburtskunde. Band x. Heft iii. 1841.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

Case of Alleged Childmurder. By Dr. Graff, of Darmstadt.

E. B. of F——, æt. 24, the female charged with the crime, was suspected to be pregnant, by her parents and neighbours; but she denied the fact, although well aware of her condition. On the night of the 10th November, after having taken violent exercise in dancing, she retired to rest but suffered from severe pain. The following facts were obtained from the confession which she subsequently made to the civil authorities:

About three o'clock in the morning she rose from her bed, and went to a neighbouring stable, where she was suddenly delivered, the child falling from her on the floor. At this time *she heard the child cry.* Fearing that this might create an alarm, she seized a knife, and cut at the body of the child, but where she wounded it, owing to the darkness, she could not say. Immediately after she had thus used the knife, the crying of the child ceased. The placenta came away about a quarter of an hour afterwards, and this with the body she buried in a heap of dung.

This woman was examined on the 23d November, and it was found that she had been recently delivered. She made a full confession, owing to which the body of the child was discovered, and on the following day it underwent a medico-legal inspection. The body, which was that of a female child, was about eighteen inches long. The skin had begun to separate by putrefaction. The bones of the cranium were flattened without presenting any mark of fracture; and the brain had been forced out. The face presented marks of violence, but the openings of the mouth and nostrils were free. The umbilical cord had been torn through at about two inches from the abdomen. The right forearm had been separated at the elbow-joint from the upper arm. The viscera of the chest and abdomen were in a state of putrefaction.

The lungs over their whole surface were covered with dark-looking vesicles containing air; they were expanded, and filled up the cavity of the chest, except in the fore-part, which was occupied by the thymus gland, also in a state of putrefaction. These organs when placed together on temperate water floated. The lungs when placed by themselves on water floated above the surface.

On cutting into them for about one fifth of their substance from the surface, a crepitating sound was perceived. This portion was of a dark colour, light, and spongy. The internal substance of the organs was brown and firm; and on cutting into it no crepitation was perceived, nor did any blood escape. The pieces into which this inner portion of lung was divided readily sunk in water. The heart was black from putrefaction, and there was some decomposed blood in its cavities. The foramen ovale was open.

Among other appearances it was observed that the epiglottis was closed.

In his report, the examiner gave it as his opinion that this child *had not breathed.*

Although putrefaction had so far advanced as to render any evidence from the application of the hydrostatic test doubtful, yet he thought from the firmness, colour, and great specific gravity of the inner portion of the lungs, which was not putrefied, as well as from the total absence of air-cells, that there was sufficient ground to infer that respiration had not been performed. This opinion was corroborated in his view by the facts that the epiglottis was closed, and the foramen ovale in the septum of the auricles was open.

Another question put to him was, whether the obstruction to respiration had proceeded from accidental or intentional causes, which he answered by stating that the child, in his opinion, had come into the world dead.

The flattening of the skull and extrusion of the brain, he ascribed to some person having accidentally trodden over the dung-heap where the child was buried, some time after its body had advanced into a state of putrefaction. The separation of the right fore-arm, evidently from tearing and not from wounding, had probably taken place under similar circumstances.

The air-vesicles on the surface of the lungs, as well as the inflation of a portion of their substance, were an evident result of putrefaction. The same may be said of the buoyancy of the heart and thymus when placed on water. The air-vesicles in these organs, but especially those in the lungs, seemed to keep the viscera on the surface of water. The death of the child, within the body of the mother, was attributed to her having, during the latter part of her pregnancy, worn a tight bandage round the abdomen, as also to her having over-exerted herself in dancing the night before her delivery.

The medical opinion thus expressed being in direct opposition to the confession made by the prisoner, the case was referred by the legal authorities to one of the Hessian medical colleges. The members were directed to reconcile the facts if possible with the confession, and to give a judgment on the medical report. They examined the questions seriatim, and first that relative to respiration after birth.

After examining the grounds on which the medical opinion was expressed, and making due allowance for the advanced state of putrefaction in the body, owing to its having been buried in the dung-heap, they came to the conclusion that there was a *certain degree (!)* of probability, that the child had breathed. They complain that the heart and thymus were not placed on water separately; since their buoyancy may, under the circumstances, have been due, not to their being in a putrefied state, but their receiving support from the air in the lungs. They contend that the most putrefied lungs which have not respired sink in water, and that the air of putrefaction, contained only in a thin layer on the surface of the lungs, would rarely, if ever, suffice to give buoyancy to the lungs, heart, and thymus at the same time. If the examiner supposed that the air in the thoracic viscera was derived from putrefaction, he ought to have used compression, and then again tried the hydrostatic test. This would at once have settled whether the air was due to putrefaction or not.

In looking at the facts with the most lenient eye, and admitting that putrefaction had advanced so far in this case as to destroy all the usual marks of respiration, it must at the same time be allowed that the conclusion drawn from the colour and consistency of the substance of the lungs was unjustifiable, and decidedly erroneous.

The sinking of the lungs either wholly or in part, they contend, is no proof that the child has not lived and breathed. Many cases are recorded which establish the truth of this statement, and they refer to Henke for facts, which show that children whose lungs have sunk in water have been known to live, breathe, and cry. They consider that the state of the epiglottis and foramen ovale furnishes no evidence on which reliance can be placed. The open state of the mouth and nares is quite compatible with the child having been wilfully suffocated, or its respiration intentionally suppressed; and, on the whole, they contend that the opinion first expressed, that this child had been born dead, was false and untenable.

They object to the explanation given of the marks of violent injury on the body, and think that they might rather be accounted for by reference to the weapon employed by the mother. The conduct of the inspector is condemned, because he was made aware of the confessions of the prisoner before he drew up his report, and he should therefore either have reconciled the medical facts with the confessions, or have clearly shown in what respect the confessions were inconsistent with them. They close their judgment by the remark, that there was no ground whatever for asserting that any of the facts of the case were in opposition to the confessions made by the prisoner.

[Remarks.—We have selected this from many other cases of infanticide reported in the same journal, owing to its presenting some points which are deserving the attention of the English medical jurist. We assume that the confession made by the female was true: there seems to have been no reason to suppose that she wilfully misrepresented the circumstances, and we shall now compare these with the medical inferences.

The practitioner who examined the body came to the conclusion that the child was born dead and had not performed the act of respiration. We agree with him that the buoyancy of the lungs was due to putrefaction, and it appears to us that the reasons adduced against this conclusion by the medical college are wholly unsatisfactory. The inference to which they come, that the child had respired, appears to be an ex post facto conclusion, not warranted by any of the appearances met with on inspection, and apparently grounded only on the confession of the female that she had heard the child cry for about a minute after delivery. Had this not been known to them, we doubt whether they could have conscientiously affirmed that there was a single appearance indicative of respiration. Much was omitted, it is true, by the first examiner, but in this fact we have rather a want of evidence than a reason for supporting an opinion by negative assumptions.

We agree in their condemnation of the report, but not for the reasons which they assign. The case was beyond the reach of medical evidence, owing to the body of the child being in such an advanced state of putrefaction; there was no ground for asserting that the child was born dead, nor was there any proof of its having been born living. The facts of the case were certainly not in opposition to the confession made by the mother; for it is possible that she may have heard the child cry, without its being necessary that its lungs should float in water. The Medical College are indignant at the inference that the air-vesicles seen in the lungs arose from putrefaction only; yet they immediately afterwards admit, on unquestionable authority, that children whose lungs sunk in water have been known to live, breathe, and cry. Hence then the discovery of air in the organs was not, on their own view, necessary to account for the feeble cry which the mother heard. The error committed by the physician who examined the body was, that he took the sinking of the central portion of the lungs as direct evidence of still-birth, the floating of the superficial portions being satisfactorily accounted for by putrefaction: but in this he only followed what is a general rule of the profession.

Notwithstanding that it is now well known that new-born children live and breathe for many hours and even days, and yet their lungs wholly or partially sunk in water, it is the custom at most coroner's inquests to take this as direct

evidence of still-birth. The impropriety of this practice is clearly shown by the case reported; for here the confession of the mother proved, that this child must have been born living, while the medical rule usually followed would have led to the inference that it was born dead. If females charged with the crime in this country were more frequently to make candid confessions, we should probably often find these in direct opposition to the medical opinions given before a coroner. There can be no doubt that many children are pronounced still-born on this erroneous principle, and the case is at once disposed of. No further enquiry is made, and the murderess probably owes her escape to the prevalence of this false medical doctrine. We may in some measure satisfy ourselves on this point, by comparing the proportional number of so-called still-births among children which are the subjects of coroners' inquests with the ascertained proportion of still-births among illegitimate children.

The course of conduct for a medical witness to pursue in such a case, when the body of a child is not so putrefied as to render an examination useless, is to content himself by saying, that there is a want of evidence of life after birth, and not to affirm from the sinking of the lungs that the child must have been born dead. This condition is certainly a presumption in favour of still-birth, but nothing more; and if in neglect of this rule we state that the child could not have survived birth, we must be prepared to have our opinion contradicted by the confession of the prisoner, as by circumstances of the existence of which we were not aware.

But it may be asked, can it be admitted that a child in whose lungs no air is found should have had the power to cry? We think the present case satisfactory on this point, although others are not wanting which show that children whose lungs sunk in water have been heard to cry; in these cases the cry appears to have been always feeble, and the air which produced the sound probably came from the larger divisions of the bronchi, and not from the substance of the lungs. There is a curious case reported in the present number of this Journal, (p. 243,) which shows the possibility of this, even in the adult.]

Henke's Zeitschrift. 27 *Ergänzungeheft.* 1840.

ANIMAL CHEMISTRY AND PHARMACY.

On the State in which Urea exists in the Urine. By MM. CASS and HENRY.

THE authors have previously asserted (Journal de Pharmacie, tom. xxiii,) that urea exists in the urine in combination with lactic acid, and perhaps also with phosphoric acid, and this assertion having been questioned by M. Lecanu, MM. Cass and Henry have made new experiments to prove the existence of normal lactate of urea. Fresh urine was evaporated to five sixths of its volume, at a heat below 120°; and the brown acid liquor which remained was filtered and concentrated at a gentle heat towards the consistence of syrup, then dried *in vacuo*. The dry residuum was agitated in a flask with ten or twelve times its weight of a mixture of two parts of sulphuric æther and one part of rectified alcohol. After some days of contact and agitation the æthereal liquor was re-filtered and saturated by a slight excess of alkaline carbonate. A new filtration was effected, and the liquor exposed to a very gentle heat gave beautiful prismatic crystals of lactate of urea, identical with those obtained by the direct combination of urea and lactic acid.

Journal de Pharmacie. Juin, 1841.

On the Nutritive Qualities of Gelatine.

TEN years ago a commission was appointed by the Institute of France to enquire into the properties of gelatine as a material for the food of the poor. The members were MM. Thenard, D'Arcet, Dumas, Flourens, Serres, Breschet, and Magendie (reporter), and the question which they set as the scope of their en-

quiries was, "Is it possible by any economic plan to extract from bones an aliment which, either alone or mixed with other substances, may take the place of meat?" The report now presented in answer is very lengthened; the conclusions are as follows:

1. It is not possible, by any known plan, to extract from bones an aliment, which, either alone or mixed with other substances, can take the place of meat. 2. Gelatine, albumen, fibrine, taken separately, nourish animals for only a very limited time, and in a very imperfect manner. In general they soon excite an insurmountable disgust, so that the animals prefer to die rather than touch them. 3. These same proximate principles, artificially united and made agreeable to the taste by seasoning, are taken more readily and longer than where they are given separately; but in the end they have no better influence on nutrition, for the animals, though they take them in considerable quantities, at last die with all the signs of complete inanition. 4. Muscular flesh, in which gelatine, albumen, and fibrine are united according to the laws of organic nature, and are associated with other substances such as fat, salts, &c., is sufficient, even in very small quantity for complete and prolonged nutrition. 5. Raw bones have the same advantage, but the quantity consumed in twenty-four hours must be much greater than that of meat which will suffice. 6. Every kind of preparation, such as boiling in water, the action of muriatic acid, and especially the transformation into gelatine, diminishes the nutritive qualities of bones, and even seems in some cases to destroy them altogether. 7. The commission, however, does not wish to pronounce at once on the employment of gelatine associated with other aliments in the nourishment of man, knowing that only direct experiments can throw a clear light on that subject; they are now actively occupied with such experiments, and the results of them will be explained in the second and last part of the report. 8. Gluten, such as is extracted from wheat-flour, is sufficient of itself for complete and prolonged nutrition. 9. Fatty substances, taken alone for food, support life for some time, but they give rise to an imperfect and disordered nutrition in which fat accumulates in all the tissues, sometimes in the form of oleine and stearine, sometimes in that of almost pure stearine. [We have given only the conclusions of this report, because dogs having been the subjects of the experiments the results, though thoroughly established as far as those animals are concerned, are only probably applicable in the physiology of man. They abundantly confirm the generally admitted truth of the insufficiency of proximate principles for food; but the main question, namely, to what extent bone-soup is a good article to form a part of human diet, and how it may be best prepared, remains unanswered.]

Archives Générales de la Médecine. Sept. 1841.

On the Preservation of Ferruginous Pills. By M. Simonin, of Nancy.

The following method is said to have the effect of preserving ferruginous pills in an unalterable state, and maintain their proper consistence, which is not obtained by the ordinary formula:

Take pure protosulphate of iron,
pure subcarbonate of potash, of each equal parts.

Reduce separately into a fine powder, then mix and triturate together until they begin to liquefy. Add a sufficient quantity of clarified honey to render the mixture completely liquid. Place the mortar on a very slow fire, and constantly triturate until the mass assumes a pilular consistence. Preserve in a pot or divide into pills.

Bulletin Général de Thérapeutique. Janvier 15 *et* 30, 1841.

II. THE BRITISH JOURNALS.

ANATOMY AND PHYSIOLOGY.

Obliteration of the Aorta beyond the Arch. This is a long and not very interesting paper, the object of which is to point out two modes in which the aorta may suffer contraction or total occlusion. In the first case, the contraction or obliteration takes place a little below the point where the *ductus arteriosus* joins the aorta; and Dr. Cragie is inclined to think that this form of the affection is owing to the "obliterating action which has taken place in the *ductus arteriosus*, being from some peculiar cause prolonged into the aorta, and there giving rise first to contraction and then to obliteration of its coats." Subsequently he regards it as "the result rather of an arrest of development than of positive and active disease," though, in another part of the paper, he expresses himself as if the lesion were to be regarded as the result of inflammation. This form of contraction or obliteration of the aorta is distinguished from the one about to be noticed, by always occurring at the same point; by being due to some change in the coats of the vessel itself, not produced by external pressure as of a tumour, and by the smallness of the tract along which the lesion extends, which seldom or never exceeds a line.

The second form of constriction is stated to be owing to some "extrinsic" cause, as a tumour pressing on the vessel, or incurvation of the spine, or the pressure of an aneurism "formed on the arterial tunics:" and this form most usually takes place in the abdominal aorta, much further down than in the former case. From this last, it is further distinguished by the contraction being much more extensive than in the other, as it may occupy half an inch, an inch, or two inches.

In both these forms of aortal obliteration, the circulation in the lower half of the body is maintained through the lower intercostals, the epigastric and internal mammary arteries, and the circumflex arteries of the ileum.

The author seems to attach great weight to the distinction between the modes of obliteration described above; which distinction, however, so far as regards the occlusion simply, is obviously rather of pathological than of therapeutical interest: and the important conclusion, as it is termed by him, which the author deduces, viz. that the aorta, though at first sight essential to the circulation, may nevertheless be obliterated without fatal results is shown, by his own paper, to have been known since the year 1643. Dr. Craigie, *in Edinburgh Med. and Surg. Journal, Oct.* 1, 1841.

Fœtus viable at six months. The catamenia of a lady flowed on the 24th of June, 1838, and continued for a week. She bore, on the 11th January following, a child which survived. The child was one of twins, the other twin died a few minutes after birth. *Case by* A. Dodd, Esq., Surgeon to the Chichester Infirmary. *Provincial Medical and Surgical Journal.*

[The only ground of doubt in this case is, whether it was truly the catamenia which flowed in the end of June. It appears that the lady had had a great deal of "walking exercise" immediately before the appearance of that discharge, and it is conceivable that it may not have been truly menstrual. It is on the other hand proper to state that the lady herself was fully persuaded that it was the regular menses, and that her unusual intelligence and accuracy of observation rendered a mistake, on her part, unlikely; that any irregularity had never before happened to her; that her periods had always been entirely regular to an hour. Finally, the remarkably diminutive size of the child left no doubt as to its birth being singularly premature.]

On the Production of the Ergot of Rye. Mr. Quekett has already shown that ergot is owing to grain being infested with a parasitic fungus, in consequence of the sporidia of this fungus being by some means introduced into

the interior of the plant, and ultimately arriving at the grain, which they find the most suitable matrix for their development.

Twelve healthy grains of rye, wheat, and barley, grown in contiguous fields in Surrey, were placed in a plate with a little water: some ergots of wheat were next introduced into the water; the sporidia of the fungus were detached by a camel-hair pencil, and the ergots then removed. After germination had made such progress, that the grains became wrinkled from appropriation of the albumen, the plants were removed into the country, and planted together in March last. A similar experiment was performed with the same number and variety of grains, but with fungus obtained from the exterior of an ergot of a large grass, *elymus sabulosus*.

The greater number of the grains treated as now described failed in being perfect plants. Only four of rye, (one infested with the fungus from the elymus, and three from that of the wheat), three of barley and four of wheat proved perfect. On every plant of rye, there are a greater or less number of ears possessing ergots: but in the barley there is only one imperfect ergot, and in the wheat there is none. Mr. Quekett remarks, that, if the cause of the ergot was in this instance of external origin, it is singular that the barley and wheat should have escaped; but explains the result on the supposition of rye being most liable to this peculiar infection.

Mr. Quekett conceives from these experiments that the production of ergot from the absorption of the sporules of the previously described fungus, by the fibres of the roots of the germinating grains, will be found to be the true cause of this singular production; and that, when they arrive at the grain, they convert it into the body known as the ergot.—Edwin Quekett, Esq., F.L.S., *Medical Gazette*, No. iii., *Oct.* 1841.

Motions of the Heart. A blue shark about eight feet long was caught, and brought on board the merchant ship Africa, in the Indian ocean, at 2, P.M. of the 15th July, 1836. After the seamen had cut open the body, and taken out the back bone, I removed the heart and held it in my hand. The contractions were slow, remarkably distinct, and in the following order:

1. The auricle.
2. The ventricle scarcely any interval.
3. A pause.

The contraction of the ventricle occupied a longer time (about double) than that of the auricle. The organ was empty. We had no instrument at hand to try if any sounds accompanied its motions, and the use of the finger employed by M. Cruveilhier did not occur to us.

These phenomena were continued for several minutes, and their order of succession was apparent, not only to Dr. Rumley, of the Ceylon Rifle Regiment, who was present, but to a number of military officers, all of whom, on being asked what part began the movements, uniformly pointed to the auricle.

The contractions were about fifteen in the minute at the beginning of the observation, and fell to about six when it was ended, the periods of repose being more lengthened in proportion to their relative duration than those of contraction.—Dr. Cavet, *Dublin Medical Press*, No. cxli., *Sept.* 15, 1841.

PATHOLOGY, PRACTICAL MEDICINE, AND THERAPEUTICS.

Antiquarian Notices of Leprosy and Leper Hospitals in Scotland and England. This an extremely elaborate and erudite paper to show the former frequency and severity of this loathsome disease in these kingdoms. According to the Anglo-Saxon lexicographies of Sommer, Lye, and Bosworth, "leprosy" was heretofore known by the singular and striking term "seo mycle adl," "the muckle or great evil" or disease. In the year 1200, there were in

the counties of Northumberland, Cumberland, and Durham, a variety of hospitals, exclusively devoted to lepers. Three of these contained so many as ninety-five lepers, namely, those of Sherburne, near Durham, of Carlisle, and Bolton in Northumberland. Bloomefield, in his History of Norfolk, states that there were eighteen lazarhouses in Norfolk alone. In some of these the patients were amply provided for.

Astruc, Bach, and our own historians, Fuller and Heron, supposed that leprosy was introduced by those who returned from the Crusades, and brought it from the east. But the author of the present paper remarks that, even allowing that the disease is contagious, and that the increased national intercourse of that period may have tended to propagate it, there is ample evidence of its having existed in Europe, and even as far west as England, before the Crusades. It lingered long in Scotland after it had disappeared in England, and long in the northern islands of the former kingdom, as in Shetland, after it had left the mainland. In the Faroe islands (the land nearest the Shetland, northward), and in Iceland, it either still exists or existed at a very late period. In 1768, Peterson found 280 lepers in hospitals in Iceland, Olafsen and Henderson described the disease as existing when they visited the island in 1818. And the French expedition of 1836 brought back coloured sketches of natives affected with tubercular leprosy, which sketches are now in course of publication. Dr. Simpson, Prof. of Midwifery in University of Edinburgh, *Edinburgh Med. and Surg. Journal, Oct.* 1, 1841.

Connexion of Climate with Diseases of Malarial Origin. The author shows in a series of interesting statistical observations and tables, the dependence of intermittent and remittent fevers on climate and temperature: but that synocha, synochus, common continued, ephemeral, and inflammatory fevers are nearly or wholy dependent on these causes. Dysentery and diarrhœa, on the other hand, are remarkably influenced by them: bearing, in this respect, a striking analogy to intermittent and remittent fevers. He rejects the notion that colic and cholera are dependent on exalted temperature: and questions the opinion of British statistics as to the connexion of hepatic affections and tropical temperature. He distinguishes between miasmata and mere effluvia. The latter, which are the mere elements of a compound body, are as innocuous as the compound itself; but the former may be new compounds, "resulting from the play of affinities among those liberated atoms." He states it to be a fact well known in the United States and in Canada, that although cultivation ultimately renders a climate more salubrious, yet endemic diseases, for several years after the soil is first cleared, become more severe and often assume an epidemic character. This is owing to the surface of the soil being exposed to the sun's rays, and consequently yielding a more noxious and copious malaria than when protected by a dense vegetation.—Dr. Forry, *American Journal of Medical Science*, No. iii. *July*, 1841.

[We need scarcely apprize the reader that Dr. Forry's observations apply to the American continent only.]

On the Application of Mathematics to the Science of Medicine. [This is a sensible paper on the value of the numerical method in medical research: the advantages of which are fully pointed out in our Twenty-third Number, article first: every possible doubt as to its unequivocal utility and importance is set for ever at rest. We shall briefly quote an interesting illustration of the satisfactory results of the application of numbers, in medical practice, in the case of a disease, regarding the respective value of the different modes of treating which, it was supposed, nothing definite could be determined.]

During the prevalence of cholera in Limerick, one of the writers of this article was first attached to St. Munchin's Hospital, where he tried every mode of treatment suggested by the profession, with so little apparent success, that he lost all faith in the influence of medicine. In this frame of mind he was transferred to St. Michael's Hospital, where the admissions were very numerous and

the mortality alarming. He there found the calomel practice pursued with much more boldness and resolution, than any results he had witnessed could have induced him to adopt. As it was little complicated with the use of opium or any other medicine which could materially interfere with its operation, he determined to become a mere observer of its results for one month, that he might obtain some numerical evidence of the good or evil which at least one powerful remedy was capable of effecting. To arrive at more accurate conclusions, he noted in each case, on admission, the presence or absence of the pulse at the wrist, and took care that the registrar or apothecary did the same whenever he was absent. He also, in conjunction with the other physicians, endeavoured to prevent as much as possible the admission of patients in the mere premonitory stage, which, however, was not always possible. At the termination of the month he found the gross amount of deaths was 47, out of 165 cases, or less than one third, which was not far away from the general mortality in most countries which had been visited by the disease. He had here a proof that the numerical method, if applied only to the admissions, general treatment, and gross results, could lead to no practical inferences; for as the proportionate mortality in St. Michael's Hospital was nearly the same with the mortality in every other hospital in the kingdom, he could deduce nothing either favorable or unfavorable to the treatment from any comparison. But his enquiry had a closer application, inasmuch as the patients were classified on admission into those not yet in collapse, or who had a perceptible pulse at the wrist, and those in collapse whose pulse was not perceptible. On casting up the tables and ascertaining the amount of mortality in these separate classes, he was perfectly astonished to find, that in the first class, affected with rice-water vomiting, and purging, and suppression of urine, there were only 5 deaths out of 119 cases, while there were 42 deaths out of 46 cases admitted in a state of collapse. He had here at once evidence sufficient to lead to the most certain and confident conclusions. Cholera, so far from being a disease difficult of cure, was obviously more readily and certainly brought under the control of powerful remedies than any other known malady of so formidable a nature, and failures occurred entirely from neglecting to adopt a sufficiently bold and energetic treatment in the early stage; the only one in which the system is susceptible of the action of remedies.

The same method of observation applied to ascertain the extent to which calomel should be employed in cholera, showed that "salivation was wholly unnecessary for the cure," and the authors are therefore perfectly warranted to draw the conclusion which they do. "These imperfect illustrations of the accurate results to which the numerical method may lead in medicine; and above all, in those diseases which have equally baffled the industry of the morbid anatomist, and the speculations of the most philosophic theorist, may suffice in some degree to show what might be accomplished by a perfect and well-considered application of it in the investigation of disease." Dr. Griffin, *Dublin Journal of Medical Science*, No. lix. *Nov.* 1841.

Plague not Contagious. On the 2d of December last, the Zebra was driven into Kaiffa, on the coast of Syria, and the crew having been landed, lived for some time in the town, which is described as abounding with all "manner of abominations." A short time after this, cases of plague occurred at Acre, in repairing the fortifications of which, part of the crew of the Zebra was employed. This detachment returned to the vessel on the 15th of February, on the 17th of the same month, the Castor arrived at Kaiffa with orders to break up the Zebra aud embark her crew; and on the 20th, fourteen men belonging to the latter vessel were sent on board the Castor, in exchange for a party of artificers. On the evening of this day, a seaman belonging to the Zebra, who had been employed in the boats at Acre, was attacked by what is called fever, but which we understand, from what follows, to have been plague; and between that day and the 25th, thirteen more cases were added; but

whether all consisting of the party employed at Acre is not stated. The men were instantly removed on board the Castor, and the disease now manifested the character of genuine plague. In order to prevent the diffusion of the malady eleven men were selected to attend wholly on the infected persons. Not one of these was attacked by the disease, nor were any of the Castor's people, except an artificer who had been landed and lived with the Zebra's men at Kaiffa, though there were at least twenty-four persons, including four medical officers, fully exposed to the contagion during its continuance on board the Castor.—*From a communication to the Admiralty, by* Sir William Burnett.

Hereditary Tendency to Mental Disease. The object of this excellent essay is strictly conformable to the motto, which consists of a quotation from Sir James Mackintosh's well-known letter to the late Rev. Robert Hall, of Bristol, on the recovery of the latter from an attack of insanity. "Whoever," writes Sir James, "has brought himself to consider a disease of the brain as differing only in degree from a disease of the lungs, has robbed it of that mysterious horror which forms its chief malignity." The author accordingly states it to be his object to divest "the subject of predisposition (to madness) of all the mystery with which it has been invested.....and to show that it depends upon the physical structure of the brain and nervous system." He points out the tendency, in certain families, to certain forms of madness, dependent doubtless on a particular family organization. Where hereditary tendency exists, he thinks its non-development is to be referred to one of three causes: 1st, One of the parents has been untainted and of robust constitution; 2d, The natural physical power and training of the individual himself have counteracted the hereditary predisposition; 3d, Rank, position, or profession, have removed him from influences calculated to develope that disposition. In 76 out of 514 cases, the disease descended from the mother; in 57, from the father; in 30 cases, two relations were deranged, in 484, only one relation. Both the parents of 6 of the cases were mad. The character of these cases, which would be interesting, is not given. The author concludes with expressing his belief that "hereditary tendency to mental disease is dependent on organization, is subject to the ordinary laws of the system, and in so far as our knowledge of that organization and of these laws extends, may be cured, counteracted, and ameliorated, in the same way, and on the same principles, as the tendencies to other diseases."—Dr. Browne, of Crichton Institution, *Phrenological Journal*, Nos. xiii and xiv. *Sept.* and *Oct.*, 1841.

On Diabetes. In this paper, which is the outline of an essay commenced several years ago, and which the recent publications of Dr. Prout prevent the author, who has paid much attention to the subject, from giving in a more extended form to the public, the views entertained of the pathology of the disease by various authors are briefly given, and the objections which may be urged against those views then stated. These we omit, but give the author's explanation of the phenomena of diabetes in his own words:

"The disease, except when caused by some local injury, is dependent upon an accumulation of carbon and oxygen, and a deficiency of nitrogen, in the system; whether owing to the quality of the ingesta or atmosphere, or to a morbid condition of one or several organs destined to eliminate carbon alone or combined with oxygen, i. e. the lungs, the liver, and, in a majority of cases, the skin: those principles being directed to the kidneys, which, in consequence, set up an increased and vicarious action; a considerable deviation of the nervous system from the normal state being, in some cases, the cause, in others, the necessary effect of those morbid phenomena."

In supporting these views, the author observes that the surplus of carbon and oxygen may be accounted for, 1st, From insufficient elimination of carbonic acid gas by the lungs, in consequence of structural disease of those organs or of any cause that diminishes their power of eliminating carbon, as a course of mercury, nitric acid, strong tea, depressing passions. 2d. From disease of the

liver and consequent disturbance of its power of decarbonizing blood transmitted to it. 3d. From disordered function of the skin. 4th. From a diet chiefly or exclusively vegetable. 5th. "Carbon may accumulate in the system in consequence of its constant absorption from the atmosphere, which, in our populous manufacturing districts, is so abundantly charged with carbonaceous matter."

[An endeavour is made by alleged facts and reasonings, to substantiate the preceding views. The subject, with Dr. Stanley's views of it, is an extensive and difficult one, and not to be discussed on an occasion like the present. With regard to the absorption of carbonaceous matter from the atmosphere, as a cause of diabetes, we have only to remark that it is a mere and not a very probable conjecture. We are also inclined to believe that, if, under a vegetable diet, less carbon is given forth by the lungs, it is because less of that principle is generated in the system, and that therefore there is less to be eliminated.]—Dr. Stanley. *London Medical Gazette.* No. 50. *Sept.* 3, 1841.

On the Subjectivity of Disease. The following extracts contain the most tangible part of the author's views on certain matters, the difficulty and obscurity of which and our want of the necessary information, render *speculation* perhaps the only legitimate method, as yet, of treating the subject.

The process of self-maintenance taking place by means of the minute organisms (the cells), has for its conditions a continual self-procreation at all portions of the body, and which, in other words, is a constant individualising (that is, the formation of cells, possessing each inherent life of its own); but running parallel with this power and action is seen a resolution of the individual life into the general influence exercised by the totality or universal organism, and by which an ever restless change, or circle of organic activity, is kept up and preserved until death comes on.

Now, if all tissues, organs, and systems are composed of simple individualised cells, it will follow that the process of disease falls within the sphere of these minute organisms, and must be viewed as an anomalous form of cellular life or activity, which can no longer act in harmony with, nor is influenced by, the universal tendency before alluded to.

That in inflammatory affections an altered or diseasedly-excited formative action is present, is evident from their production of morbid growths, formation of membranes, hypertrophies, and so on; and it is true that this has been acknowledged, but these *after-productions* grow, and are evolved according to laws of formation, regulating the whole organism itself in its primordial development; namely, out of the cells, and their power of evolution: that these productions are just as much *after-lives*, as what we denominate healthy structures, proceeding from and produced by a special, ultimate, and objective mode of life in the cells, has not been so acknowledged until very lately, indeed, by a few German physiologists. Allowing such to be origin of the *evolution* of diseased life, it is evident that two strictly subjective conditions may be existing in an organized body at one and the same time, namely, health and disease; and, therefore, the latter is not a mere *negation*, but something *positive*. Diseased life develops itself, like healthy life, out of a nucleus, and has just as much an essence or substratum at the bottom as the other has, and is no more the negation of health than evil is the negation of good.

We would, therefore, agree with Stark and Sobernheim, that disease is not the *negation* of health, but is something *positive;* and that in the theory of cellular evolution is to be sought the origin of all pathological formations; that all forms of exudation, membranose and pseudo-membranose structures, tubercle, carcinoma, hydatids, and moles, &c., are ultimately dependent upon a peculiar objective form of cellular life, as well as obliterations of vessels, hypertrophies, and hepatizations.—Dr. Hughes Willshire, *Lancet,* No. iv. *Oct.* 23, 1841.

Presence of Sulpho-cyanogen in the Saliva. In this paper, the author, after stating that he will not bring forward any evidence to prove the presence of sulpho-cyanogen in the saliva, it being generally admitted that it is rarely

absent in the perfectly healthy individual; and after quoting Dr. Ure's observation that the absence or presence of the substance may afford a valuable indication in doubtful cases, gives several cases, and an illustrative tabular view, and thinks himself warranted in drawing the following conclusions, with which his paper finishes:

1. That sulpho-cyanogen is frequently not present in the saliva secreted by patients labouring under various diseases, at least that it is not discoverable by the sesquichloride of iron.

2. That it is frequently absent in febrile diseases, and in others where the permanent range of the pulse is considerably above the natural standard.

3. That it is invariably absent in distinct salivation produced by mercury, and that the non-reaction of the sesquichloride of iron upon the saliva does not seem to depend upon its great dilution, for when concentrated the same indications are produced.

5. That the presence of certain foreign constituents in the saliva, such as sugar in diabetes, may probably prevent the action of the reagent, or in some cases cause the red colour to be evanescent.

6. That, though the presence of sulpho-cyanogen in the saliva is not to be depended on as a criterion of good health, yet that its absence ought to excite an investigation into this point.

7. That the absence of sulpho-cyanogen in the saliva, when taken separately, is no proof of the action of mercury on the system; although when this secretion is copious, fetid, of light specific gravity, attended by spongy or ulcerated gums or cheek, and accompanied with this chemical characteristic, there will exist the strongest reasons for believing that this mineral has been exhibited.—*By* W. Davidson, M.D. Physician to the Glasgow Infirmary, *London Medical Gazette*, No. x. *Nov.* 26, 1841.

On the Use of Setons, especially in the Treatment of Paraplegia. In this paper the advantage of setons is illustrated by two or three cases of induration and tumefaction in the abdomen, the result apparently of acute and chronic peritonitis. "In a variety of cases," observes the author, "of acute or chronic, local or limited internal inflammation, I have had recourse to the seton, and uniformly with the most marked success. . . . . Hepatitis and nephritis belong to them in an especial manner. . . . . The efficacy of setons, when appropriately applied in the nucha, (for they are frequently employed very uselessly), is well known." But the case to which the author would particularly call attention is, that of inflammation and congestion of the spinal marrow, with paraplegia or paraplegic spasm. He insists strongly on the seton being inserted *above*, not below, or on a level with the apparent seat of the spinal affection; and expresses it as his conviction that counter-irritation applied along the spine has failed, because it has not been applied below the seat of the disease. He was consulted recently by a gentleman with partial loss of power and sensation in the lower extremities, and numbness extending to "a line just above the sacrum. Issues had been applied on each side of this line. They might, with equal efficacy, have been applied to the foot!"—Dr. M. Hall, *London and Edin. Journal of Med. Science.* No. xi. *Nov.* 1841.

[We think Dr. Hall exaggerates the importance of the rule which he lays down. The intercommunion of sanguineous, and nervous tissues, and the known mutual sympathy existing between the various parts of the spinal cord, make it seem at least immaterial whether any topical application, more especially of so chronic a character as a seton, be made an inch or two above or below the precise seat of lesion. How often do we see epispastics applied on the calves produce notable relief of cerebral affections?]

On the Dropsy, which follows Scarlatina. An important fact noticed by the author of this paper, in every case examined by him, of fatal dropsy following scarlatina is, that the effused fluid contained a notable portion of urea. He has tested fluid from the ventricles, pericardium, pleuræ, peritoneum; and

in every case he found urea. In all the cases treated by him during the last four years amounting to forty or fifty, the kidney was affected. The results of his own experience, consequently, had led him to conclude that this organ invariably suffered; but the fact of Dr. Phillip having had sixty cases in Berlin, in none of which the urine, tested by heat and nitric acid, betrayed a trace of albumen, has led him to modify that opinion.

If the author would be disposed to admit, under any circumstances, the existence of an idiopathic and general inflammatory state, apart from any local affection, it would be in acute dropsy succeeding scarlatina. Although, in all his own fatal cases, the kidneys were found affected, he does not think it by any means certain that the disease began in these organs; and he holds it to be very questionable whether the state of the kidney had anything to do with the general disease.

The author thinks the dropsical symptoms consequent on the discharge of albuminous urine easily explicable, by supposing that the blood, being drained of its albumen, permeates its vessels, and infiltrates into the cellular tissues.—Dr. Robert Willis, *in London and Edin. Journal of Medical Science*, No. x.

On some Diseases in which Albuminous Urine occurs. In this paper, somewhat akin to the preceding, the author points out that Cotunnius, Fordyce, and Rollo were cognisant of the occasional connexion of anasarca and albuminous urine. This sort of urine may manifest itself in the course of several diseases, in which there is not a trace of granular or other degeneration of the kidney. It has been observed in pneumonia, pertussis, diabetes insipidus, icterus, chronic bronchitis, and diseased heart, in rheumatism, in modified variola. In some of these cases, examined *post mortem*, no structural change in the kidney was detected; and the author states that, in the other cases, there was no ground for suspecting such a change. He is of opinion that, between renal and scarlatinous dropsy, and between the lesion of the kidney which characterizes scarlatina and Bright's disease respectively, there is an essential distinction. He considers the unusually low specific gravity of the urine which accompanies granular degeneration of the kidney, much more important, as a single diagnostic sign, than the presence of albumen.—Dr. Williamson, *Edin. Medical and Surgical Journal, Oct.* 1841.

On the Signification and Ends of the Portal Circulation. The object of this paper is to show that the portal circulation is contrived with a view to "economise arterial blood." The author observes that "the supply of so large a viscus as the liver with arterial blood, for a purpose which, however important in itself, is still only secondary, would have been a serious matter, and would have implied an increase in the pulmonary system especially, to an extent which must have been felt as inconvenient. Had the liver been furnished with arterial blood, as the means of affording bile, it must obviously have had a vessel sent to it, of a caliber equal to the sum of the vessels whose contents are finally collected into the portal vein. Nature goes more economically to work; she first uses the blood of the great abdominal arteries to vitalize the viscera, and then, gathering this into a common trunk, she sends it to minister to the function of the liver; this blood, as a vivifying fluid, is exhausted for the time, but it will still yield the elements of bile, if subjected to the elective affinity of the liver. The whole system of the liver is, in fact, calculated on economic principles, &c."—Dr. Robert Willis, *Lond. and Edin. Month. Jour. of Med. Science*, No. ix. *Sept.* 1841.

[The interesting nature of the question considered in this paper, and the importance we attach to the opinions of its author, induce us to make a few remarks on it.—Without wishing to deny the general correctness of the author's view, we may remark that it appears to us far too exclusive. In carrying out his speculation, Dr. Willis has neglected several elements of great importance. His statement that "there can be nothing in the nature of the blood of the portal system, which fits it more than any other for furnishing the elements of

bile," and that "individuals have lived and thriven without the portal system," is not consistent with what we deem the best physiological view of the subject. We are not aware of any instance, in which individuals have lived to adult age with such a malformation as that alluded to; and in the only case (that recorded by Mr. Abernethy,) in which the liver was examined with sufficient care to enable a decisive opinion to be given, it was clear that a considerable amount of venous blood might have circulated through the organ. Moreover, it seems probable, that, even if the hepatic artery furnished the only supply in such instances, the blood would have become venous before passing into the secreting capillaries. The former part of the assertion is hazarded incautiously: it is well known that the blood returning from the intestines is charged with a large quantity of crude materials absorbed from their contents: in the invertebrate animals the mesenteric veins are the only absorbents; and even where a special system (the lacteal) is evolved, it has been clearly demonstrated that they still retain, in a great degree, their original function. Now there is good reason to believe that a portion of these crude materials is eliminated by the liver, so that the blood returning from the intestines undergoes a purification before it enters the general current of the circulation; in the same manner as the blood which has received the chyle, is submitted to the action of the lungs before it passes again to the system. In cases where the portal system has been deficient, (even supposing the deficiency to be complete,) the arterial blood will become *bilifer-ous*, (so to speak,) and will therefore afford, though in a less concentrated form, the elements of the secretion. The great size of the liver in many of the lower classes of animals, relatively to the respiratory apparatus, shows that it is in them the most important organ for depurating the blood; and, if blood were to pass to it from the arterial system, it would be no more *arterial* in its character, than is that of the pulmonary artery in air-breathing vertebrata.]

On Hippuric Acid and its Tests. In a paper communicated by me to the Medico-chirurgical Society in the month of January last, it was pointed out for the first time, that when a certain portion of benzoic acid, or of a soluble benzoic salt, is introduced into the human stomach, a remarkable change takes place in its passage through the kidney. The urine voided in the course of a couple of hours after its ingestion, amounting usually to five or six ounces, will be found, upon adding a twelfth part of muriatic acid, to yield by and by a copious precipitate of beautiful rose-pink acicular crystals. These, when examined by the microscope, exhibit the form of a four-sided prism, terminated by a dihedral summit. Now this is precisely the crystalline character of an acid peculiar to the urine of the horse, cow, and other graminivorous animals, and to which, for that reason, Liebig has assigned the name of *hippuric*.

By this singular interchange of elements, capable of being effected only by the aid of vital chemistry, we have an organic product, uric acid, containing eight atoms of azote, and ten of carbon, replaced by one, hippuric acid, containing no less than eighteen of carbon, and only two of azote! In pursuing the above investigation a step further, it was ascertained that no trace whatever of uric acid or any of its salts could be discovered in the urine in question. In point of fact it had been wholly superseded by the other acid.

The important circumstance connected with this research, as bearing upon medical practice, is that the salts which this new acid forms with the ordinary bases occurring in the animal fluids, as soda, ammonia, and potash, are all of easy solubility. Thus hippurate of soda requires about two parts of water, at 60° Fahr. to dissolve it, whereas the corresponding uric salt, which constitutes, as is well known, the gouty concretions or chalk-stones, is acknowledged to be nearly as insoluble as uric acid; it requires at least 4000 parts of water to dissolve one. Hippurate of ammonia again is but little less soluble than hippurate of soda, while urate of ammonia will only dissolve to the amount of 1-480th part. Hippurate of lime, the least soluble of these salts examined by me, requires 18 parts of water to dissolve one.

The application of the above principle has proved of material benefit in the treatment of certain unhealthy conditions of the urine, occurring in subjects of a calculous or gouty diathesis; since it enables the practitioner to obviate entirely the various deposition resulting from excess of uric acid, the fruitful source of that most distressing malady, stone in the bladder; as also to control and prevent the formation of the so-called tophaceous concretions or chalk-stones, which occasion so much inconvenience, deformity, and pain to individuals labouring under gout.

By judicious exhibition of the benzoic acid, or, according to particular circumstances of a benzoic salt, that is to say, apportioning the dose to the state of the renal secretion, best previously ascertained by analysis, we can fulfil the desired indication with unerring precision, and that, as shown in the above paper, without any risk of affecting the general health, or of irritating the urinary organs.

It is to be kept in mind that this plan of treatment by no means precludes the adoption of other suitable remedial measures. Of course certain rules of diet must be observed, which there is no necessity for referring to here. It would be equally irrelevant to occupy your time with the details of cases, several of which have lately come under my notice, and go to corroborate the statements above made.

As benzoic acid is apt to irritate the fauces, unless administered in a liquid state, and as it needs a large quantity of water to dissolve it, it will be found expedient to give it along with phosphate or biborate of soda; since they enhance its solubility without abating its specific power. Thus, four parts, by weight, of the former, or one part and a half of the latter salt, will enable a comparatively small proportion of distilled water to take up one of the acid. This difficulty, as is obvious, does not apply to the benzoate of ammonia or of potash.

Phosphate of soda not only serves to hold benzoic acid, but likewise hippuric acid, in solution; and this is a point of some consequence, seeing that any excess of the latter acid, accidentally present in the urine, will remain dissolved by means of the neutral phosphate of soda, or the triple phosphate of soda and ammonia (microcosmic salt), naturally existing in that secretion. These phosphates, however, produce a very different effect upon the uric acid, inasmuch as they promptly convert it into urate of soda, by depriving the salt of one-half of its base, and thereby transforming it into biphosphate. This fact, which recently presented itself to me in the course of some experiments, and which has not been heretofore noticed by any chemical authority, seems to furnish a simple and rational explanation of the mode of formation of urate of soda, the basis of chalk-stones. Hence whenever the oxidizing process of the kidney is proceeding with such energy as to supply a superabundance of soluble phosphates on the one hand, and of uric acid on the other, there must inevitably result an excess of urate of soda.—Alexander Ure, M.D., A.M., *Pharmaceutical Transactions*, *July* 1, 1841.

SURGERY.

Deep-seated Abscess of the Breast. There is a disease of the breast, differing from the common milk abscess, which must, I apprehend, be of rare occurrence, having seen only four or five examples in the course of my life. All the cases which have fallen under my observation have taken place during suckling, and generally soon after delivery. It does not exactly correspond to the description of the deep-seated abscess mentioned in Mr. Hey's book, the cavities of which were filled with a soft purple fungus, although in other respects it nearly resembles it, and both are cured by the same plan of treatment.

This abscess forms in and behind the mammary gland, more slowly and with less pain than the common milk abscess; it does not come to the surface so

soon, neither is the skin so much inflamed or the fluctuation so distinct, consequently it is not opened early, but burrows behind and around the gland, breaking in several places, and forming sinuses in a variety of directions, none of which show a disposition to heal. The usual treatment is unavailing in these cases; a great discharge is constantly kept up, which soon affects the general health, and reduces the patient to a state of great debility, which I believe would destroy her, unless proper means are resorted to, to arrest the disease. The first case of the kind which fell under my care was that of a lady who had been confined three months, and was much exhausted by pain and constant discharge. The breast, which was naturally full and fleshy, was not much increased in size, but had an unhealthy appearance, with several openings leading to deep sinuses, communicating with each other in various directions. At this time, I was not aware of the obstinate nature of the disease, and endeavoured to heal these by injections of sulphate of zinc, stimulating frictions, and pressure evenly applied with plaster and bandage; but all my efforts were ineffectual, and I was under the necessity of dividing all the sinuses, which ran through the whole substance of the breast, so that it was literally cut into strips. The operation was a serious one, and attended with considerable hemorrhage, but the good effects were presently apparent, for as soon as my patient had recovered from the immediate shock of the operation, the wounds assumed a healthy aspect; she rapidly got better, and recovered perfectly in six weeks. At her next confinement she came from a considerable distance to place herself under my care, and as there was no hope of her ever being able to furnish milk again from that breast, I covered it carefully with a diachylon plaster as soon as she was delivered, which completely suspended the secretion of milk in that breast, although she was able to nurse as well as usual in the other, and she passed through her confinement without the least inconvenience. Since that time she has had several other children, and uniformly adopted the same course with the like success. I have met with three other cases which were treated in the same manner, with the same result. I was consulted on another case, in which the patient refused to submit to the plan proposed, and tried various remedies under different practitioners, but was at last obliged to have the same operation performed. If I saw one of these cases in an early stage, I should not hesitate to make a free opening the instant the formation of matter could be ascertained, in the hope of preventing so painful and severe an operation.—Mr. TOOGOOD, *Provincial Medical and Surgical Journal*, No. xlvii. *Aug.* 21, 1841.

MR. LISTON'S ISINGLASS PLASTER. Mr. Liston has for many years been in the habit of using, after operations and for other surgical purposes, a plaster, consisting of oiled silk covered with a coating of isinglass. This plaster is mentioned in his well-known work on Practical Surgery, (third edition, p. 35.)

The following is the method of preparing it. Moisten an ounce of isinglass with two ounces of water, and allow it to stand for an hour or two until quite soft; then add three ounces and a half of rectified spirit, previously mixed with one ounce and a half of water. Plunge the vessel in a saucepan of boiling water, and the solution will be complete in a few minutes.

Having stretched the oil silk on a board, by nailing it round the edges, apply the solution of isinglass with a brush, taking care to move the brush evenly and in the same direction, making it smooth as you proceed; as in varnishing a picture. When quite hard and dry, apply another layer, in the same manner, but moving the brush in the opposite direction, in one case horizontally, in the other perpendicularly. In this manner apply four coats of the solution, or even a fifth, if the surface be not entirely smooth. The last layer should be reduced in strength by the addition of a little more water and spirit. An ounce of isinglass is sufficient for about a square yard of the plaster.

The following precautions should be observed: the distance between the nails should not be more than an inch and a half, otherwise the oil silk will shrink

in festoons and will not remain flat. The isinglass must be well soaked in water before the spirit is added, otherwise it will not make a complete solution; and the spirit, when added, must be diluted with a portion of the water, to prevent precipitation of the isinglass The brush must be a flat "hog tool," such as is used for spirit varnish, and well made, otherwise the hairs will be found to come out, and this is an inconvenience, as the operation must be performed quickly while the solution is warm. The solution, when cold, should be of the consistence of blancmange.

Repeated experiments have shown that gelatine does not answer the purpose as a substitute for isinglass, either alone or in any proportions. A sample is on the table, in which the first three layers were composed of a mixture of the two substances, and the last is pure isinglass; in another sample only isinglass was used, and it will be seen that the latter is much more adhesive.

The oil has been, in a great measure, superseded by the use of a membrane, consisting of the peritoneal covering of the *cæcum* of the ox, rubbed down and carefully polished in the manner in which the common goldbeater's skin is prepared. The following is the report of this plaster, furnished by Mr. Ancram, Mr. Liston's assistant at the North London Hospital.

"From the extreme thinness of the plaster, the wounds can be examined without its removal. It adheres much better than plaster made with isinglass spread on silk; and in the first instance of its application becomes firmly fixed. It is difficult to fix the isinglass plaster spread on silk, unless it is very good. From the extreme tenuity of the membrane plaster, it is equally unirritating with goldbeater's skin; and when once applied it remains so accurately adherent, that it does not require to be changed for many days. Altogether, after a good deal of experience in all the different plasters, we find it the best uniting material that has ever been produced."

In applying the isinglass to the membrane plaster, the directions already mentioned, with reference to the oil silk, may be observed, but a layer of drying oil is spread on the other side of the membrane.—Mr. Jacob Bell, *in Pharmaceutical Transactions*, No. iv, *Oct.* 1841.

Complete Dislocation of the Fifth Cervical Vertebra, without Fracture. Sir Astley Cooper, in his work on Dislocation, appears to have doubted the possibility of a complete dislocation of a vertebra without fracture: and Boyer, Delpech, and others maintained absolutely that such a coincidence could not possibly happen. But the contrary is established by cases recorded by Mr. Lawrence, Sir C. Bell, Professor Rust, and Ehrlich, as well as by the case which forms the subject of this paper. This case, however, differs from those adverted to, in having taken place in a backward and downward direction; all the other cases, on record, having taken place forwards and upwards. It is extremely remarkable and interesting that the same individual, to whom this fatal accident occurred, besides presenting a perfect anchylosis of the five superior cervical vertebræ, had had a former dislocation, by which the "atlas was pushed upwards and forwards from off the articulatory surface of the axis, so as to cause the odontoid process to present itself nearly in the centre of the circle of the atlas. A bridge of bone, exactly half an inch in length, and varying from three to four lines in breadth, passes nearly horizontally forwards, from the odontoid process to the atlas, as described above; and connects them together."—*Case by* S. S. Stanley, Esq., Assistant Surgeon of the Royal Hospital, Haslar; *in Edinburgh Medical and Surgical Journal, Oct.* 1, 1841.

PART FOURTH.

Medical Intelligence.

TABLE OF MORTALITY FOR LONDON,

FOR THE THIRD QUARTER OF 1841:

Showing the number of Deaths from all causes registered in thirteen weeks, from the 24th June, 1841, to the 25th September, 1841.

Causes of Death.	Total Deaths.
CLASS I.	
Smallpox	142
Measles	249
Scarlatina	199
Hooping-cough	452
Croup	74
Thrush	94
Diarrhœa	200
Dysentery	28
Cholera	22
Influenza	8
Typhus	302
Erysipelas	46
Syphilis	11
Hydrophobia	0
Total Epidemic, &c..	1814
CLASS II.	
Cephalitis	152
Hydrocephalus	443
Apoplexy	186
Paralysis	140
Convulsions	780
Epilepsy	38
Insanity	7
Delirium tremens ..	22
Dis. of brain, &c...	114
Total Dis. of Brain, &c.	1882
CLASS III.	
Quinsy	15
Bronchitis	87
Pleurisy	16
Pneumonia	721
Hydrothorax	37
Asthma	115
Consumption	1828
Dis. of lungs, &c..	131
Total Dis. of Lungs, &c.	2950
CLASS IV.	
Pericarditis	5
Aneurism	7
Dis. of the heart, &c..	208
Total Dis. of Heart, &c.	220
CLASS V.	
Teething	333
Gastritis, enteritis ..	310
Peritonitis	9
Tabes mesenterica ..	72
Ascites	9
Ulceration	16
Hernia	23
Colic or ileus	30
Dis. of stomach, &c...	74
Hepatitis	19
Jaundice	21
Dis. of the liver, &c..	122
Total Dis. of Stom. &c.	938
CLASS VI.	
Nephritis	5
Diabetes	2
Stone	6
Stricture	5
Dis. of the kidneys, &c.	34
Tot. Dis. of Kidneys, &c.	52
CLASS VII.	
Childbed	61
Ovarian dropsy	8
Diseases of uterus, &c.	37
Tot. Dis. of Uterus, &c.	106
CLASS VIII.	
Rheumatism	31
Diseases of joints, &c.	27
Total Dis. of Joints, &c.	58
CLASS IX.	
Ulcer	4
Fistula	3
Diseases of skin, &c..	5
Total Dis. of Skin, &c.	12
CLASS X.	
Inflammation	54
Hemorrhage	35
Dropsy	365
Abscess	47
Mortification	52
Scrofula	30
Carcinoma	97
Tumour	25
Gout	10
Atrophy	126
Debility	262
Malformations	7
Sudden deaths	146
T. Dis. of Uncert. Seat	1256
CLASS XI.	
Old age or nat. decay .	653
CLASS XII.	
Intemperance	11
Privation	6
Violent deaths	259
Total by Violence, &c.	276
CLASS XIII.	
Causes not specified ..	53
T. Deaths from all causes Males 5343, Females 4931	10274

TEMPERATURE DURING THE QUARTER.

	Weeks ending											
	July					August				September		
	3d	10th	17th	24th	31st	7th	14th	21st	28th	4th	11th	18th	25th
Highest	74	80	75	74	71	71	73	76	77	77	60	70	70
Lowest	53	52	50	51	52	50	51	53	51	51	43	50	51
Daily mean	62	65	60	60	60	63	63	64	63	64	57	66	61

Quarterly Maximum .... 80° Minimum .... 43° Daily Mean .... 62°

On the Application of the Collegiate System to the Medical Schools of London.

Amid the loud and justifiable cries for medical reform with which the whole kingdom at present rings, it is both wholesome and desirable to receive the faithful warnings of a friend who calls upon us to look at home and to rectify evils which lie at our own door and concern us, as a profession, still more nearly. Into this category, unquestionably, must come those evils—great and manifold—which spring from the total deficiency of any system of collegiate discipline in our medical schools. The reform of these depends entirely, or for the most part, upon the conscientious sense of duty in the members of the profession itself; they demand no parliamentary interference; their removal will infringe the rights of no corporate bodies, while every step that shall be taken towards their correction will be in itself a positive good, a blessing conferred upon the rising members of the profession, and through them on the country at large. It is therefore with much satisfaction that we see the subject of collegiate discipline again brought prominently forward,* and we are disposed to hope, from the notice which has been taken of it in all our medical journals, that a strong feeling in favour of the cause it advocates is already excited. Most assuredly the man will well deserve of the country who, by a well-devised plan of moral superintendence, shall enable the medical student to escape the multitude of temptations which surround him just at the most critical period of his life, and instruct him in the best mode of occupying his short and valuable period of hospital studies.

We well know, from experience, the dismay with which the medical student looks around him upon the crowd of strangers who pass before him, on his first leaving the retirement of a country town for the busy mart of intellect in London. What would he not give to meet with some companion, sufficiently experienced, and sufficiently trustworthy to guide him in his choice of lectures, of books, of society? He looks at the list of lectures, of hospital attendances, of demonstrations, all of which he is required to attend, and comparing the space of time which he is to be allowed with the tasks to be performed in it, he is utterly at a loss and in despair. He has not yet learned to sift the essential from the non-essential, and is ignorant of the processes whereby even the industrious student is obliged to lighten his labour, and by which the idler contrives to discover the minimum of study required for his passing the *pons asinorum* of the Hall and College examinations. He comes up to the schools, probably, with the most upright and conscientious intentions of learning his profession, and of redeeming that time which has inevitably been too much wasted in a five years' apprenticeship. He comes to the task in all the ardour of youth, with the most sanguine anticipations of success; but he is utterly bewildered and disheartened by the multiplicity of demands upon him. He looks around for some friendly hand to guide him in his difficulties, and the chance is at least an even one, that, deceived by an assured air of importance and pretension, he is led into society the very reverse of what is desirable for an inexperienced youth, and the influence of which may greatly prejudice and mar the whole progress of his future studies and of his future life.

But the want of a judicious system of discipline is not less felt by the student in the subsequent part of his career. He has no friendly tutor to encourage him in his studies, to aid him with his advice, to warn him against evil companions. There is no check either upon his time or his money. He is surrounded with temptations, and has nothing but his own good sense and good feeling, (that of an inexperienced youth of seventeen,) to preserve him from them. His studies are to be directed solely by his own judgment; and as for religion—as if a matter apparently of the least consequence of all—there is no provision either for his instruction in it, or for his attendance upon its ordinances.

* A Letter to Sir B. Brodie, Bart., on the application of the Collegiate System to the Medical Schools of the Metropolis, by the Rev. J. H. North, M.A. Chaplain to St. George's Hospital, London. 1841, 8vo, pp. 15.

Such being the state of the medical pupil,—or at least of the majority,—during his residence in London, "a sheep having no shepherd," can it be wondered at that his good intentions speedily give way to the seductive allurements of vicious companions? His moral and religious principles are injured, perhaps destroyed. Cards, billiards, and every sort of vicious incentive lead him on; his studies are neglected; his time, too short even under the best system of economy, is wasted, and he at last contents himself with the disgraceful alternative of cramming his memory, under guidance of a Grinder, just up to that point which may cheat the vigilance of the examiners. And thus he leaves the hospitals to engage in practice, but very little wiser than he entered them, having completely wasted the most valuable years of his educational life entirely from having begun badly, from never having had a fair start in his course.

It may be asserted that the picture we have now drawn is exaggerated, and appeals may be made on the opposite side to the examination lists of every year which are published by every school, as proofs that under the present system the students are not so lost to a sense of their duty, but have shown themselves eminently distinguished both morally and intellectually; while the numerous distinguished men of whom our profession boasts, both in town and country, may be adduced as further proof that the present system has not worked amiss. It may be further stated in extenuation of the present practice, that in few of the continental universities is there any collegiate system of restraint adopted, while we all know that the same may be said of Edinburgh and all the Scotch universities, as well as of the university of Dublin.

To these arguments we answer, first, that we have not pretended that the sketch above drawn includes every one who enters to the schools. Allowing that all, and more than all, who receive honorable public approval have well deserved it, there still remains a large proportion among whom the seeds of vice and folly, unchecked by a judicious system of training, may and do grow and fructify to a fearful extent. That the examples which do credit to their profession are as numerous as they are, may mainly be attributed to the exertions and the example of the present race of professors. We do not hesitate to express our conviction, that their diligence and their right feeling have, as a body, done much, perhaps as much as is possible under the present system, to remedy the evils complained of. But this is not enough: a large and most influential body of the community must not be permitted to encounter in their very outset dangers which may materially injure and impair their future usefulness, and may render them rather a curse than a blessing to that community.

As to the state of Foreign universities or even of those in our own country, we must first be much more certain than we at present are, that they would not, one and all of them, be much benefited and improved by the adoption of some such system as we now advocate, before we can allow much weight to any argument drawn from their practice. On this point we cannot forbear giving the words of a man of no mean authority, Dr. Pusey, as quoted in an excellent article in the Quarterly Review for Jan. 1840. Speaking of the German universities Dr. Pusey says, "On the removal of the student to the university he passes at once from boyhood to manhood; at once, instead of discipline and control, he is left almost unfettered even by moral guidance; the only requisition made is, that he should attend one or more sets of lectures. Some general advice is also given him as to the method which it may be most advantageous for him to pursue; but beyond this, what instruction he should receive, and from whom, whether he should live as a Christian or as a heathen (provided he interrupt not the public peace) is left to his own option." In this description of the errors of the German schools we at once recognize those of our own, and so correct is the likeness that we might with slight alteration substitute the one for the other. But even granting that the discipline in foreign schools is just what it should be, the condition and the requirements of a London university must widely differ on this point from any or all of them. The vast size of our metropolis has, we doubt not, a very prejudicial effect upon the moral habits of a class of young men thrown together without any feeling of responsibility or control. Indeed

we cannot but consider that this fact alone, in the present state of things, constitutes a very decided and important objection to the metropolis as the site of medical schools; and we rejoice, on this ground, at the recent establishment of so many excellent medical schools in the provinces. And though the eminence of the metropolitan professors, and the numerous advantages possessed by the London schools will always attract the greater part of those entering the profession, yet we must look upon an education in the country as having at least superior advantage in a moral point of view, and as thus possessing the power to abate, in some degree, the evil which we now hope to see abated in London.

Let us now examine somewhat more in detail the system which is at present adopted by students in London, and enquire what are the facilities for the introduction of a complete plan of collegiate discipline. We fear that unvarnished truth must declare, that from beginning to end, whether with regard to moral discipline or professional study, system there is none. The only guide as to the course which the student is to take is his own inexperienced judgment, assisted by the curriculum of required attendance upon lectures from the Apothecaries' Hall and the College of Surgeons; books he is to select at his own discretion, and the disposal of his time is under the same direction. On first coming to the London hospitals, one of two plans is generally adopted; either he is placed in the family of some surgeon or physician in the neighbourhood of the school that he is attending, or, which is much the most frequent plan, he takes a lodging in the vicinity, generally in the same house with two or three other students. In this last case, of course, the time and conduct of these gentlemen is under no control whatever, with the exception of whatever influence the particular professors may have in their intercourse with them in the school, which is necessarily of a very limited extent. The only exception to this general rule is to be found in King's College. The late excellent principal, Mr. Rose, had much at heart the introduction of collegiate discipline in that school, and his views have received encouragement and support from all the professors,* but hitherto their practical application has been very limited. Sufficient however has been done to convince all who have observed the influence of this arrangement, of the great advantages to be derived from it, and nothing now seems wanting but the energetic efforts of the friends of that institution, to carry out the desired plan with complete effect.† All the other colleges and schools have confessedly made no attempt to secure any further influence over the students than what may be effected by the general system of annual rewards for the most industrious, and the very occasional correction of the most idle by the withholding of their certificates of attendance upon lectures.

The universities of Oxford and Cambridge offer to us the only models for a complete system of collegiate superintendence. It is not professed that the discipline is here so complete that idleness is eschewed, and vice entirely kept in check; indeed whatever advantages the system may offer, we are aware that its rules are most imperfectly carried out even in these favoured spots, and therefore the amount of good which is actually produced may be presumed to be only a part of what might be expected from the more perfect administration of more perfect laws.

It is unnecessary to enter into any details respecting collegiate arrangements so well known as those of our ancient universities. We shall pass in review their more characteristic features, and consider the adaptation of a modified system of the same general kind to the wants of the London schools.

1. *College Rooms.* We are quite aware that there are objections to the crowding

* See British Magazine for January, 1840, for some observations on the enlarging the accommodation for medical students at King's College, by Professor Todd.

† The rooms at present provided for students in King's College form, it must be remembered, but a small part of the plan for improvement of the condition of the students which we contemplate. There is little or no control exercised over their time or their pursuits, and there is no system of college tutorage attempted. We must not therefore take this feeble attempt as any sample either of the advantages of the college system or of the facility of its adoption.

together a number of young men, and that the fears of some sincere friends to the introduction of a better system than the present, are strong upon this head. We confess however that, knowing as we do the difficulties which require to be overcome in the introduction of a new system—and that one which must to a certain degree curtail the liberty of young men—we still are so certain of the advantages which must arise from a *judicious* and *cautious* administration of the discipline, that we ourselves have no fears whatever as to its ultimate success. There is one principle, however, in connexion with this part of the question, which must, at least at first, be admitted, to meet the prejudices and the jealousy of control, natural at the age of medical students. We should recommend, that for the present the submission to the restraints of college life should be made *optional* with the student. The advantages which are certain to flow from it must be the inducement to him to submit to its restraints, and if for any reason he prefers being left entirely at liberty, let him have his will. By this means one great advantage will result to those within the college, that the dissipated and ill disposed will be separated from them, and thus a great hindrance to their studies and good conduct will be removed. There are also many obvious and sufficient reasons which would induce some of even the best disposed to prefer living at a distance from the hospital; as, for instance, in the case of the residence of the pupil in the house of his parents, or their relations, or friends.

In reference to the possibility of providing accommodation for all that may require it, we request attention to the following considerations. The average cost to the medical pupil of his lodging at present is about 14*s.* per week, which, granting that he stays only eight months in the year, makes £24. For this sum he is often content to obtain a small bed-room and sitting-room, in a confined gloomy situation. Now, if we fix the average terms to be demanded by the college at £20,* one hundred resident students would produce an income of £2000. Out of this deduct £500 for incidental current expenses, such as servants' wages, repairs, &c. &c., and we have still £1500 as the return for the capital invested in the building. This sum, calculated at 5 per cent. would be the equivalent of £30,000 principal, a sum, we conceive, more than sufficient for the required purpose. But it is to be borne in mind, that this calculation is made at a high rate of interest, certainly higher than money might be raised for; not to mention all abatement on the score of donations, which would certainly be received towards so good a cause. We have also here provided only for 100 students, but few of the large schools would have so small a number accommodated within their walls, and some would have many more: moreover, the larger the building the less proportionally will be the expense;—that is, room for 200 pupils would not cost the double of what would be required for 100. The *average* rate of charge to the student might, as we have said, be £20; but, of course, this must vary in each case according as he chose to have one or two rooms, or according to the floor on which he lived, as in the chambers at the inns of court.

If a college residence be thus provided for the students, it is obvious that a system of regular discipline in regard to hours of admission at the gates must be adopted to give the whole system that efficient power of control which is essential to the proper governing and guiding of a body of young men. We do not, however, say more upon a part of the subject on which we may be opposed to the views of many well wishers to the collegiate system, because we now only desire to make a general sketch of our proposed plan. The details may be further discussed hereafter. We now only desire to give an impulse to the public feeling already excited.

Though it will be highly desirable that all students who are willing should be received within the walls of the building, yet under some circumstances of want of accommodation, licensed lodging-houses might be permitted, under the same rules and discipline as in the college itself; but of course all freshmen, and as

* The rooms at King's College are let at from £25 to £30 for the whole year. It is desirable to charge these as low as possible, as a great number of students would be prevented from entering them by inability to pay at so high a rate as this.

many as possible of the senior students, should be required to live within the walls.

2. *Tutors.* The establishment of resident college tutors is the most important part of all the system under discussion. This is an improvement that is imperatively demanded, and which is so reasonable, and so easily accomplished, that if nothing else is done this must. At Cambridge and Oxford,* (where, by the bye, the college tutor is by no means what he might be and ought to be,) this functionary is appointed from among the fellows, and receives from each pupil allotted to him from £2. 10s. to £4 per quarter; or from £10 to £16 a year. If twenty-five students are appointed to be under his tuition, this will realize to him an income of £250 to £400. At the Universities the tutors have also their fellowships, and these, together with the pupils' fees, produce a handsome income. This however is not to be expected or indeed desired in London. Let a tutor be appointed to every twenty-five students who shall pay him each £8 or £10 a year: this will give him an income of £200 or £250; and of course his rooms will be found for him, and perhaps his board. These tutors might be chosen by examination from the most meritorious of the third years' pupils; and though some preference should be shown to the members of the particular school, we should advise that the election should not be restricted to them, but thrown open to all the schools. How many men of superior talents and attainments would be delighted to obtain an appointment, which would enable them to pursue their studies with comfort for several years longer than they might otherwise be able to do! The duties of the tutor should be much the same as they are at the Universities. He would be the friend and guide of the pupil; his Mentor in every respect. He would superintend and assist his studies, practical and theoretical, and second the instructions of the Professors by frequent catechetical exercises. His superintendence should not be permitted to extend to more than the number we have mentioned, lest its efficiency might be proportionately diminished. By means of this system of tutelage, the student would be saved from vast waste of time and labour, and at a less expense than he now pays for a three-months' assistance from the *grinder*, that dernier resort of idleness. This disgraceful system of pretended instruction we should hope to see entirely superseded by the proposed reform. If it should be thought unadvisable that the tutors should be chosen out of the class of students, and that the office would require men of longer standing to keep up due authority, we have no doubt that such an office would produce numerous candidates. There are many most competent persons who would prefer such a life to the anxieties of private practice. Perhaps a beneficial arrangement might be—for the tutors of the first-year's-men to be chosen according to the first plan; and the two-years'-men might have these senior tutors.

We feel confident, from a considerable experience among hospital pupils, that a plan of instruction, such as might be carried on somewhat according to the above suggestions, would so exactly accord with the wants and wishes of this class of young men, that this alone would be a sufficient inducement to them to submit to the partial restraints necessary in a college life.† Additional inducements might be found in privileges, rewards, and appointments, to be competed for only by those within the rules.

3. *Domestic arrangements.* There should be one or two dining halls in the college. When the numbers are large we should prefer two. The students might be classed as first and second-years'-men, and occupy different parts of the building accordingly, and use different dining halls; the tutors always dining with their classes.

4. *Religious observances.* Prayers should be read at the chapel of the college night and morning, and encouragement given to the regular attendance on them

* In all our statements of the system pursued at those Universities we have not studied minute accuracy: indeed there are peculiarities and differences in each, but a general view of the facts is all that is required for our purpose.

† In King's College and University College the general classes might partake of the privileges of the college rooms, and tutors might be appointed for them upon the same principles as those for the medical classes.

at least once on every day, and not less than once on Sunday. How far it might be desirable to adopt the system of fines for non-attendance, we have strong doubts; and we have not space, nor is it at present necessary to discuss the point. Of this, however, we are certain, that the regular attendance upon the ordinances of religion as a means of moral control, as well as of religious instruction, is of the greatest importance to the younger members of our profession, who in the exercise of that profession are about to enter upon duties of great moral responsibility and difficulty, and who therefore peculiarly require the guiding influences of a religious and moral education.

5. *Costume.* A particular academical dress is a matter of much less importance in London than in Oxford and Cambridge; and we have even doubts of its utility: it certainly is not necessary.

6. *Rewards and Penalties.* It may be objected that a system of Collegiate discipline must be incomplete without the adoption of rewards and penalties for the enforcement of the authority of the College, and that there will be serious difficulties opposed to the exercising of such authority unless all the metropolitan schools come in to the same plan. We answer that to a judicious and cautious application of such control there will be no difficulty on the part of the student, for whose benefit it is to be adopted, who will cheerfully submit to a necessary control for the sake of the immense benefits to be palpably derived from the whole system. Neither need the individual school which shall boldly put itself forward to remedy the present evils fear to stand alone, since the object in view is confessedly so important that there can be no doubt that the existing examining bodies must and will gladly assist the undertaking by their sanction and support, and by granting a proper degree of consideration and weight at their examinations to the certificates of good conduct accorded by the individual college. It will obviously be to the interest of the school to temper and soften the necessary strictness of its rules, and to encourage submission to them by rewarding good conduct.*

On reviewing the brief and imperfect survey which we have made, both of the evil and the remedy, we feel confident that we have overstated neither the magnitude of the one, nor the feasibility of the other. Deeply impressed as we are with the malignancy of the disease, we are satisfied that, if by any hint of ours we may have contributed towards the successful application of the remedy, we shall have rendered a high and most important service to our profession and, through its members, to the public. We rejoice, indeed, to see that the community at large are at length becoming sensible of the important and inseparable connexion between its interests and ours. The moral as well as the intellectual character of our profession must necessarily have a most important bearing upon the welfare and happiness of society in general. On every account, therefore, we hope most earnestly that the governors of the metropolitan hospitals, and the lay patrons and supporters of our schools, will feel that it is their bounden duty—assuredly it is their interest—now to use their best efforts, in conjunction with their professors and medical officers, to organize an efficient system of collegiate discipline for the benefit of their pupils. Indeed, according to our own opinion, the subject rightly viewed can leave no option to those who have the management and control of our medical institutions. They are bound by all the sanctions of morality and of religion no longer to allow a large body of our youth to lie exposed to the uncontrolled temptations of a vicious metropolis. Of the success of the proposed plan, if once set on foot, we are so confident that we venture to prophesy that if only one of our schools sets the example, the rest must, in self-defence, follow; and nothing would gratify us more sincerely than to witness the commencement of this honorable rivalry so pregnant with advantage to our profession.

* Might not a large establishment of the kind in question afford facilities for the establishment of scholarships by which, at a slight expense to the institution, board and lodging or rooms only might be given as a prize to the most deserving students for one or two years?

On the Treatment of the Insane. By John Conolly, M.D., Resident Physician of the County Asylum at Hanwell.

[We have more than once called the attention of our readers to the admirable system of treating the insane, followed by the resident physician of the Middlesex County Asylum. The establishment and carrying out of this system, as it has been done at Hanwell, while it reflects eternal honour on Dr. Conolly, has been already, and must continue more and more to be, of inestimable benefit to the insane throughout the whole civilized world. We feel it, therefore, to be a duty imposed upon us as journalists, to lend our utmost aid to the promulgation of the plans of treatment advocated and enforced by Dr. Conolly; and with this view, we extract from the "Third Report of the Resident Physician," dated October 1st, 1841, all that relates to *bodily restraints*, *seclusion*, *general treatment*, and *religious services*. These admirable and conclusive observations we recommend to the earnest consideration of all our readers, and especially to all those gentlemen who are in any way connected with the insane in lunatic houses.]

"Disuse of Bodily Restraints.—In the First Report presented to the visiting justices by the present resident physician (in October 1839), the general views by which he was guided in the commencement of his duties at the asylum were briefly stated. In his Second Report (in October 1840), those views were more fully explained, particularly such of them as appeared to him to be least clearly understood in other asylums. During the past year the same general plan of management has been steadily acted upon, and, with the continual help of the visiting justices, all the arrangements of the building and establishment have been gradually adapted, or are in the course of adaptation to their fulfilment.

"It is unnecessary for the resident physician to dilate on such principles as are now admitted into every well conducted asylum for insane persons. To ascertain, if possible, the remote or immediate origin of the malady in every case, and to derive from this enquiry some rules of successful treatment, to endeavour to gain and preserve the confidence of each patient, to create or to maintain a character of kindness and tranquillity throughout the asylum, together with a vigilant superintendence; to forbid the exercise of violence, threats, or deception; to classify the patients in the manner most likely to promote their recovery; to be careful of their diet and clothing; to occupy and to amuse them; to secure them cheerfulness or content by day, and comfortable rest by night; to consider all their weaknesses and infirmities, and to pay a general regard to whatever may act favorably on the mind and body; to abstract every cause of hurtful excitement, and to encourage every hopeful symptom of mental recovery; these are the objects professed by every rational physician to whom the insane are entrusted, and the time is fast approaching in which lunatic asylums will only be distinguished from one another by the skill and perseverance with which the infinite means of accomplishing these objects are varied and applied.

"Their application at Hanwell must always derive additional importance from the great extent of the asylum, and the large proportion of incurable patients at all times contained in it. Whilst the relative number of cures, and even the mortality in any asylum will be found to depend in a great measure on the rules regulating the admission and discharge of patients, the relative amount of comfort and happiness in asylums should be equal in all, or dependent only on the forms of disease respectively contained in them. In the acute and early stages of mania and melancholy, sensibility may be oppressed, and the patient may appear indifferent to places, persons, and all varieties of treatment. Experience shows that this oppression, even in the acute stage, is more apparent than real; and that deep impressions are made, good or bad, as the treatment may vary, and not afterwards to be effaced. But in the chronic form of mental disorder, which comprehends every conceivable variety of mental wreck that may survive the storms of the first attack, the patient's well-doing is entirely dependent on his general management. To those, unfortunately many in number, for whom no hope of cure remains, the asylum is the earthly home; the only friends their distress has left them are under the roof with them, and they will only leave it for the grave. For them, therefore, the daily and habitual life takes its colour from

the general principles which animate those at the head of the establishment in which they are placed. It may be rendered abject and wretched by indifference or by ignorance; and it may be diversified with a large variety of happiness by enlightened benevolence. If computation fails to show this, it is plainly appreciable by observation, the result being the greatest degree of general tranquillity, safety, and order, with the smallest possible display of direct control, and an entire absence of severity. The great aim of the superintendent of a lunatic asylum must ever be to effect these objects by a simplicity of means essential to their constant application, and by a concurrence of innumerable indirect influences, which, systematically brought to bear on those committed to his charge, render direct command and visible authority rare and rarely required.

"More than two years have now been completed since the resident physician began to report to the visiting justices the gradual disuse of mechanical modes of restraint, and the substitution of a more efficient superintendence by means of a greater number of attendants of intelligence and respectability; his motives, as then stated, were the apparent inefficacy of mechanical restraint as a means of preventing accidents and mischief; its irritating effects on the violent, the alarm it occasioned to the timid, and its tendency to debase those to whom it was applied, and to create incurable habits of uncleanliness. The resident physician gratefully remembers the consideration these representations received from the visiting justices in the autumn of 1839; and the kindness and constancy with which his early efforts to abolish a mode of treatment so objectionable were regarded by them, in the midst of difficulties which he is now happy to be able to refer to as entirely overcome.

"In October, 1840, after a year's experience, made in circumstances some of which were singularly unfavorable to the success of the trial, he felt himself justified in announcing its probable success. Another year has now passed, and the experiment has for a part of this year been conducted by a united household. From the moment of this union of purpose among the officers and attendants, the obstacles besetting the experiment have diminished, accidents and assaults have become less frequent, and the general tranquillity and order of the asylum have increased. However unpleasant the recollection of the state of the asylum may be at the time of the commencement of the change of system, it affords the important knowledge that confusion among the patients is the concomitant of unfaithfulness in those on whose exertions the superintendent must depend, and the preservation of discipline easy when those whose office it is to preserve it are zealous and sincere.

"Every successive month appears to add to these encouraging effects, the attendants daily acquiring a clearer appreciation of a system from which violence of every kind is excluded. Its advantages are thus more effectually secured to patients newly admitted; and the general results strengthen the conviction that by abolishing restraints many other evils, considered inseparable from lunatic asylums, are at the same time swept away.

"In the course of the year, several patients have been admitted in restraints, and many more marked with restraints imposed before admission. The management of all these cases has proved perfectly practicable without restraints. In general, the patients have seemed very sensible of the benefits of their emancipation; and in some instances in which patients so marked, marked indeed for life, have recovered, they have delivered a consistent and impressive relation of their former treatment, and expressed their belief that it was extremely injurious to them. In one case, that of a fine young man, of excellent temper (J. E.), both ancles and both wrists were ulcerated, and he informed us that this was done by handcuffs and leg-locks, worn before admission, and the whole body so emaciated that he seemed to be sinking fast into the grave. For a short time this patient was occasionally troublesome, and he was now and then secluded; but he gradually became quiet in his behaviour, he grew stout, was employed in the store-room, and in four months went away quite well, and with the good wishes of all who knew him. This young man repeatedly said that he owed his life to his removal to Hanwell.

"In another case (H. L.), a young man, was admitted whose back was covered with ulcers, and he was apparently paralysed in his lower extremities. He can now walk

about; and there is too much reason to believe that the account given by his relatives is correct, and that his ulcers, and the temporary privation of the use of his lower limbs, were occasioned by his having been long fastened down in bed, and consequently, as always happens when patients are so restrained, often lying on wet bedding.

"Very recently a female patient (M. R.) was admitted, who was supposed to have lost the power of walking in consequence of paralysis; she is also gradually recovering, and walks about. Her friends report that she was always fastened down before she came to us. She proves to be perfectly harmless; and, being an elderly woman, the use of her lower limbs would probably have soon been irrecoverably lost if she had not been removed.

"Great, and sometimes insuperable, difficulty is experienced in attempting to gain the confidence of patients who have been treated with austerity or subjected to restraints before admission. They can scarcely be convinced that fair words conceal no guile, or that they will be allowed to sleep unbound. One patient (C. C.), a poor girl of 20, held out her hand a long time after going to bed for the first time at Hanwell, and could with difficulty be persuaded by the nurse that it would not be strapped to the side of the bed. She said she was accustomed to have one hand and both feet fastened at night. Her general demeanour proved to be remarkably quiet; but now and then she was excited, and benefited by leeches, baths, and even by temporary seclusion. She now looks so stout and cheerful as scarcely to be recognized as the depressed creature who came to us in August, but she is still in a state requiring occasional medical treatment. On the same day a stout florid young Irishwoman was admitted, very irascible, and loudly complaining of having been violently treated. There were marks of manacles on her wrists. In a few days her behaviour much improved. She soon became occupied in the laundry, and then a valuable helper in the kitchen of one of the officers, and in less than two months she left the asylum perfectly well.

"Cases of a somewhat similar description are too numerous for particular detail; and they are only alluded to as illustrating, by their subsequent course, the indiscriminate abuse of restraints of which the patients have been the unfortunate subjects. The importance of admitting patients of the poorer class as soon as possible into the asylum, when they become affected with insanity, cannot be overstated. Young persons are brought to us who have been a few weeks maniacal, and, in consequence of the alarm or ignorance of those about them, have been locked up by the police, forcibly tied down in workhouses, exposed to severity and insult, and have had handcuffs put upon them, and been eventually sent to the asylum much exasperated by all that had passed. This was remarkably exemplified in a delicate young woman of 18, (M. S.), whose recovery commenced from the date of her admission, although she was both maniacal and disposed to suicide when she was first received, and who has left the asylum quite recovered. The wild gestures and frantic aspect of this young creature began to be lost when she had been two days in the wards. She became remarkable for mildness and amiability of conduct, but retained a strong recollection of the manner in which she had been treated before she was sent to us.

"To those who have opportunities of observing the extraordinary changes wrought in the most violent recent cases, by continual patience and kindness, it cannot but appear probable that some among the older patients, who remain immoveably sullen or morose, might have been benefited at an earlier period, if they had not been treated roughly and without consideration.

"A prolonged maniacal attack is not unfrequently characterized by continual activity and a most ingenious disposition to mischief. When restraints were employed, these restless and troublesome patients were very frequent subjects of it. It prevented the necessity for the almost continual watching required, and which was too irksome to be borne by an attendant who could at once be relieved from his care by putting the patient's hands in a leather muff, or locking his ancles together. The inconveniences then created fell chiefly on the patient, and many such patients were by degrees allowed to be either in constant or in very frequent restraint, always greatly to their detriment, and sometimes to their entire ruin. The patients now alluded to are

seldom violent; they are easily amused, and when amused are as playful as children, but they are irritable, and become uncertain in their temper under the annoyance of mechanical restraints. In the commencement of the attack, there is often evident bodily disorder, and it is one of the most serious of the evils attendant on bodily restraints that patients so treated do not receive that share of medical attention which they require. A strong illustration of this kind of case presented itself to the resident physician within the last three months.

"A male patient (R. E.) was admitted on the 23d of June, and reported to be 'dangerous to those about him.' It was avowed that in the asylum from whence he came he had been kept almost constantly in instrumental restraint for three months. He laboured under some religious and other delusions, was almost always talking, and somewhat restless in his habits, so that although emaciated, and suffering from disorder of the stomach and bowels, it was not practicable to keep him among the quiet and feeble patients in the infirmary. He was placed on that account in a ward assigned to more troublesome patients, but he was of course never subjected to restraint; and, although fidgety and always in action, he occasioned so little solicitude to attendants trained to habitual vigilance, that he was never once even put in seclusion. A red and coated tongue, a voracious appetite, a disposition to swallow grass or gravel, frequent vomiting, irritable bowels, and a rapid pulse, afforded plainer indications for medical treatment than are usually met with in the insane, and clearly pointed out the case as one requiring remedial means rather than physical coercion. The state of the digestive organs became the subject of especial attention, and dictated a careful medicinal and dietetic treatment, under which this poor man has gradually recovered health and strength of body, and is fast advancing to the recovery of his mental faculties. In September he began to work in the garden, he is placed in one of the quietest wards, he writes affectionate and rational letters to his wife, and he lately partook of the sacrament in the chapel at his own request.

"It is never possible for a physician to say of any case that it was treated on erroneous principles at a period anterior to that when his own observation of it commenced; but it is certainly difficult to conceive the necessity for mechanical restraints, and particularly for continual restraints, in a case of this description.

"T. F., a poor Irish labourer, was admitted in February last, looking wild and half starved. He had worn a strait-waistcoat, he said, in the workhouse from whence he came, and had been tied down in his bed. His mental disorder seemed the mere result of misery and starvation. The common comforts of the asylum composed him, he instantly began to recover, and is now perfectly well. He was placed in no kind of restraint or seclusion, but lodged in the infirmary and treated as a sick man. The excuse for dwelling on the value of attentions which every physician would consider both simple and obvious, is, that where restraints are at the constant command of the attendants, their ready imposition so entirely alters the aspect of the case that it scarcely gains the physician's attention at all.

"A female patient (S. P.) was admitted in January, labouring under complicated bodily disease, of which she died. The delirium which attended her malady had been thought indicative, before her admission, of the necessity of putting her into a strait-waistcoat. She had formerly been a nurse in this asylum, and told us that she helped those about her to put on the waistcoat, as they did not understand how to do it, a circumstance at least showing how little necessity there was for such an application. The frequent imposition of a strait-waistcoat on a submissive patient by a single attendant was one of the circumstances which originally awakened the attention of the resident physician to its habitual abuse.

"Incidents exemplifying the success attending the persevering application of diversified means to all kinds of cases, instead of restraint, are too frequent and too numerous to be reported. Thus (R. S. S.), labouring under acute mania, occasioned much trouble at night by his restlessness; various medicinal applications were tried without success, and his room and dress were so arranged, that his restless nights could be followed by no bad consequences on his health, but he was never fastened to his bed. At length it occurred to the house-surgeon of the male side, that malt liquor sometimes proved an agreeable sedative. A bottle of Scotch ale was given to

the patient at night with the most satisfactory effects, and continued for some weeks; the quantity was then gradually reduced, but its omission for a single night was still followed by bad effects. During this time, the patient who had been reduced to the state of a skeleton, and was generally excessively noisy, has become fat and in all respects greatly improved. He has been able to attend at chapel, and he sometimes plays the flute whilst other patients dance, and seems in good humour with everybody about him.

"Less striking cases were, however, among the more unhappy victims of restraints; restless, helpless creatures, seldom speaking, and seeming almost wholly stupid, and scarcely exciting attention. In a case of this kind (E. H.), a poor feeble man, could not always be induced to lie down on his bed; he sometimes remained a great part of the night, or the whole of it, standing at the door as if ready to come out. He slept much by day, seemed well nourished, seldom spoke, and never complained, but his ancles began to swell. Continued attention from the night-attendants and the keeper of the infirmary, together with a new kind of bed, in the course of adoption, instead of straw beds, (and presently to be described,) at length had the effect of habituating this patient to lie in his bed at night; and he may now often be seen by day no longer sleeping or stupid or silent, but cleaning the knives and forks, polishing the fire-irons, and pointing to and telling of the result of his exertions, with much apparent satisfaction, and he appears in perfectly good health. It is unquestionable, that if this poor man had been fastened in his bed by hand or foot, he would have become less and less capable of exertion, and that he would have soon entirely lost his health, and would also have remained in restraint every night until he died. The resident physician cannot forget having more than once discovered that dying patients were not released from restraints. Even in the restlessness of death, their feet were strapped or chained to the bedstead, and an order to liberate them seemed to occasion surprise.

"The resident physician feels himself called upon to speak of these subjects with less reserve than he has previously maintained, being assured that his efforts, and those of the visiting justices, to abolish useless coercion, would have met with no dissentient voice if the extent of its abuse had not been too considerably veiled. The certainty of abuse creeping on the use of coercion, whenever it is permitted, is an argument against it which nothing can overcome.

"Although the resident physician has abstained from taking part in the controversy carried on without intermission in various publications since the appearance of his last Report, considering it his duty to content himself with the opportunity of making, in another Annual Report, a faithful and unimpassioned statement to the visiting justices, he begs to say that he does not refrain from particular allusion to the animadversions made on his former statements with any feeling of disrespect towards those who conscientiously differed from him. For any personal observations, or unjust censure cast upon him, he has more than found a compensation in the approbation of his efforts expressed by the visiting justices, by whom alone they were fully known. He has also continually had the satisfaction to perceive that the members of the medical profession, although engaging on different sides of the question as to the abolition of restraints, have honoured him with the same courtesy and kindness which he has experienced from them on all former occasions. He willingly ascribes the manifestation of any contrary feeling in any other quarter to a want of opportunity of seeing the questioned system in actual operation, and to a forgetfulness that, whether the system be right or wrong, its professed object is to avoid unnecessary cruelty.

"Several hypothetical, and some real cases of complicated difficulty have been adduced as proving that there were many forms of mental disorder wholly unmanageable without restraints. Having never presumed to say that no possible case could ever occur in which a resort to restraints might be found convenient, the resident physician has perused these cases carefully. Of all of them it may be observed, that they would have been more complete if an attempt to treat them without restraint had formed any part of the narrative. Apparently such attempts were not made, and the impossibility of doing so was only assumed. It has also been with surprise that he has not yet met with one related case, with one imaginary combination of danger and difficulty, of which he does not know, from actual observation, that the management is practicable, and the evils are avoidable, without having recourse to such measures.

"It is moreover an important fact, that in the only asylums in England in which attempts are known to have been made to abolish restraints, the experiment is reported to have been successful, as in the asylums of Lincoln, where the experiment was first tried, Melton (Suffolk), Northampton, and Lancaster, the last the largest asylum except Hanwell in this country. The resident physician scarcely feels himself at liberty to mention other asylums in England and Scotland, in which he knows that the trial is now making under competent superintendents; but he may refer to the liberal manner in which the attempt has been received at Glasgow, at Montrose, at Stafford, and by the directors of the Retreat at York, as well as by the physicians of asylums in America, as encouraging a hope that the number of institutions for the insane in which strait-waistcoats, muffs, restraint-chairs, chains, and straps are no longer seen, will become greater in every succeeding year, until such unnecessary auxiliaries of treatment, if they prove to be unnecessary, are universally abandoned.

"Seclusion.—The resident physician would earnestly impress upon all who may do him the honour to refer to his Reports with a desire either to form a judgment of the plan pursued at Hanwell, or an intention of adopting it, the necessity of considering *all its parts*, of which the discontinuance of mechanical restraints is only one. It is especially necessary to be guarded against the extravagant notions of *seclusion* set forth by the opponents of the non-restraint system. A reference to the Report of last year, in which this very important particular of treatment was fully described, will show, that instead of being an imprisonment productive of every moral and physical evil, it is a simple exclusion from the irritable brain of all external causes of additional irritation; that it places the patient in security, without fretting him by muscular bindings and impediment of limbs; that it secures other patients from danger, and the violent patient from injury when in restraint and defenceless, whilst it removes from his companions a spectacle always displeasing and often alarming to them, that of a patient, who if at large must be degraded by the muff or sleeves; that it very seldom fails to tranquillize the patient in a short time, and is even generally productive of immediate composure; that with all this it is easily effected, whereas the imposition of restraint was often only accomplished after a severe and irritating struggle, and was always most difficult when most required; and, lastly, that it has no general tendency to leave a revengeful feeling in the patient's mind.

"But to secure these advantages of seclusion, it must be remembered that the term is applied to the temporary confinement of a lunatic in his own bed-room; sometimes with the light partially excluded, sometimes almost entirely; that it must not be hastily resorted to; not carried into effect with anger, but steadily accomplished, when persuasion fails, by a sufficient number of attendants; that it must not be accompanied with irritating expressions; nor applied as a punishment; nor unreasonably prolonged. All instances of seclusion should be promptly reported to the medical officer or matron; the state of the patient in seclusion should be ascertained from time to time through the inspection-plate; and any appearance of contrition should be met with kindness. After half an hour, or one hour, or two hours, in different cases, the practicability of putting an end to the seclusion should be tried; except in instances where a longer repose of the brain is plainly required.

"This is the manner in which seclusion is directed to be practised at Hanwell; and although there are many days in the year in which there is not a single patient in seclusion during any part of the day, opportunities of witnessing its remarkable influence in inducing quietness are of course frequently afforded. In conducting visitors through the asylum, their attention is generally directed to the cases actually in seclusion, and whom they are commonly able to observe without occasioning them any disturbance.

"These advantages, there is every reason to think, were never derived from any form of mechanical restraint. The resident physician is aware that an opinion is entertained by a few respectable authorities that restraint exercises a salutary moral effect. He can recall no instance in which it seemed to him to do so. It has also been said that patients accustomed to violent attacks of mania will beg to be put in restraints. He does not disbelieve this; but he has never met with an instance of it. He has occasionally known patients beg that restraints might be put on other patients:

he never knew them ask to have it put on themselves. He has met with one instance in which a patient who recovered some years ago, states that when he was excited he always felt secure as soon as restraints were put on. The same individual, however, is now liable to attacks of excitement; but never solicits to be put in restraint of any kind. Patients liable to attacks of mania in a house where restraints are much employed, regard the accession of an attack with terror; but it is quite possible to screen them from every danger without restraint. The indignation of those on whom restraints were forcibly imposed; their eloquent exposition of its degrading and maddening effects; their fierceness when running about the wards in a strait-waistcoat; the alarm and discontent their presence occasioned to other patients; their speechless joy, their sobs and tears, when unexpectedly liberated, when both in seclusion and restraint, in the midst of a paroxysm of reproaches prolonged until they were covered with perspiration and their lips were literally covered with foam, are things of which the memory can never be effaced from the mind; and they make the ear deaf to specious representations of the comforts of straps and strait-waistcoats. When these results are contrasted with those of simple seclusion; when the angriness, the ferocity, and sullenness characteristic of some of the wards in which restraints were habitually employed (as in the epileptic wards,) are compared with the present indications of confidence and general good temper, the firm impression left is, that the general bad effects of restraint and its liability to abuse are immeasurably more pernicious than anything that can be occasioned by its discontinuance.

"After the trial already made at Hanwell, and a frequent revision of every kind of troublesome case, the resident physician can only concede that there would be some *convenience* in putting certain patients in restraint, who have the inconvenient habit of suddenly striking those about them. But even this convenience would only be temporary, for it cannot be continually applied. Seclusion, therefore, although it does not wholly remove the difficulty of such cases, is a better temporary resource, as it neither leaves the patient offended, nor aggravates his combative propensity, which restraint always seemed to do in exact proportion to its severity and duration. No patients in the asylum were more dangerous to approach than those who were fastened every day in restraint-chairs; and no patients have improved more signally since their entire liberation.

"One cherished error of the advocates of restraint is, that it can at least do no harm to the incurable. The fact is, that no patients are more permanently injured by it, in temper, feelings, and habits. The case of a female patient was last year commented upon as a case in which restraint might have been applied with convenience, as the patient was incurable. This patient (E. W.), after a long and troublesome attack, left the asylum well in July last.

"But, in cases in which there is no hope of cure, the mitigation of violence, ensuing on the long absence of any irritation that can be avoided, is extraordinary. D. E. was admitted in June, 1839. She had been long insane, and was of a violent temper. For some time this patient was daily committing or threatening some violence. Restraint was freely employed: shower-baths and the douche were often resorted to to calm her paroxysms. The baths were apparently useful, but the restraints seemed only to exasperate her the more. At length, every exciting application, mechanical or verbal, being found hurtful, she was spoken to with invariable calmness, and scarcely ever interfered with. She continues liable to violent fits of passion, but seldom treats those about her with incivility, though often desirous of conversing with visitors, and seems to take a pride in conducting herself with a studied and ceremonious politeness.

"A memorandum relative to restraints, furnished by Mrs. Bowden (late Miss Powell,) the matron, comprehends forty-one cases, almost all of which were in *constant* restraint of some kind or other previous to September, 1839. Fourteen of these patients were almost always fastened in restraint-chairs, and twenty were almost always in a kind of strait-waistcoat, called sleeves: several were in complicated restraints, and some in a chair, and at the same time in sleeves, or the muff, or in leg-locks. All these patients were liberated before the end of September, 1839. Not one of them has been in restraint since. Thirty-seven are yet in the asylum, and there is not one who may not be pointed out as an instance of the improvement of the

mental faculties, or of the habits, in consequence of never being subjected to restraints during two years. Some, who were considered dangerous at all times, are now occasionally seen at the work-table, smiling, and pointing out what they have done. Some, who were sinking into dementia, or imbecility, are now living and talkative. Some, who were said to pursue visitors through the ward, are now never known to do so. The brief statement of the past and present condition of these patients is one of the most interesting documents ever drawn up in any lunatic asylum, although its preparation is only one of many important services rendered by the matron to the cause of the poor lunatic.

"As at that time no Reports were ever made, or records kept, by the attendants of the patients in restraint, whilst closets full of instruments of restraint were at their command, it was impossible for the resident physician ever to know, by night or by day, how many of the patients whom it was his duty to protect were in actual bondage.

"It was curiously indicative of the perversion of feeling engendered by long familiarity with restraint, that there was no part of the asylum in which they were more freely employed than in the female infirmary; and to one instructive instance of their misapplication the resident physician must ever acknowledge himself indebted, as the cause of his being more immediately roused to forbid practices on which he had always looked with dissatisfaction.

"A young woman (E. D.), in a state of chronic dementia, following attacks of mania which had occurred six or seven years previously, was found, on the resident physician's first visit to the wards after his appointment, fastened in her bed by a strap round her neck, by a strap round her waist, and by straps to her feet. She also had on the sleeves, which enveloped her hands in hard leather cases, and her hands were also fastened by short straps connected with the strap round her waist. She was extremely feeble and emaciated; her skin was in a very irritable state. She could not get out of bed or raise herself up, or turn, or lift her hand to her mouth. In this state she had been kept for some weeks. No cause was assigned except that she was troublesome, that she would undress herself, that she was always in mischief.

"Day by day, with all the caution assumed to be necessary, one after another of her galling restraints was removed. For a short time she proved to be mischievous and troublesome in her powerless way. She delighted in taking off the clothes from her irritable skin, and she preferred standing up to lying down upon the irritating straw of her bed. She one day broke a pane of glass (being still locked up in her room), and squeezed part of her superfluous wardrobe through it. This habit was discontinued when she was permitted to come into the gallery; but, as she was fond of taking any unappropriated bread, tea, or beer that she found in the ward, the infirmary nurse, who had highly disapproved of all the proceedings in the patient's favour, contented herself with the milder means of fastening a long strap to the waist-strap of the patient's dress, and securing her by it to an iron bar, or a bench, or a heavy restraint-chair, in which state visitors shrunk with affright from this poor harmless creature. This thraldom being also forbidden, the patient gradually became less troublesome, and being removed to another ward slowly recovered strength, and even became fat. The poor girl had been a music-mistress, and in a few weeks after her restraints were taken off she was led to the organ in the chapel by the physician's ever kind assistant, the matron, and induced to play. It need scarcely be added that her playing was not listened to without emotion. This patient is yet in the asylum, imbecile, and incapable of employment, but seldom mischievous or troublesome; and so altered are the habits of the attendants, that if she were to be ordered into severe restraint, or into any restraint at all, it would probably create a general feeling of horror and aversion throughout the house.

"The unavoidable impression made by such a case was, that there must be something inherently wrong in a system of treatment, the grossest misapplication of which, witnessed daily by those whose general kindness to the patients was never called in question, appeared to excite no surprise.

"The resident physician is anxious to state the results of the experiment which ensued on these impressions in cautious language, so as to avoid creating unreason-

able expectations, but he considers it to be his duty to relate his experience without disguise. He feels able, after two years' careful trial, to state:

"1. That much difficulty will always attend the discontinuance of restraints, in consequence of the indifference and indolence of attendants accustomed to avoid trouble by imposing them on every occasion in which a patient is irritable or mischievous.

"2. That some of the patients who have been long accustomed to severe mechanical restraints must be expected to be troublesome for some time after being restored to freedom of muscular action.

"3. That this disposition may show itself in a proneness to quarrel and fight, or to break windows, or to knock at the door of their bed-rooms during a part of the night. Patients who have been heretofore strapped or chained to the bedstead every night, being liberated, probably fancy it to be day, and knock at the doors that they may be let out. Patients who heretofore passed every day of the year in a restraint-chair have become accustomed to the sole amusement left within their reach, that of striking the passers-by.

"4. That if the attempt be steadily persevered in, the conduct of several of the most troublesome patients will eventually be found to improve, and the attendants will gradually learn that they can manage the patients better without restraint than with it.

"5. That one conspicuous result will be a general tranquillity in wards previously distinguished for excitability and noise. When the epileptic patients have been frequently in restraint, this will be remarkably evident in the epileptic wards. When every epileptic patient is fastened in bed at night, although only by one hand, almost every such patient will be more strictly bound on the approach and for some time after a paroxysm; so that a very great amount of restraint will become habitual in the epileptic wards, and frequent struggles, quarrels, and blows, as well as general discontent and ill humour, will characterize them. The alteration effected by the entire disuse of restraints among them will be proportionably striking, for many of the epileptics are perfectly rational between the paroxysms, and fully appreciate the manner in which they are treated.

"6. That abusive language, assaults, and acts of violence will gradually become of less frequent occurrence.

"7. That a disposition to meditate mischief or revenge will seldom be observed.

"8. That the general aspect of the patients, throughout the house, will become more cheerful and confiding.

"9. That the patients will be quieter at night, apparently enjoying the natural rest that belongs to a state of physical and mental comfort.

"10. That the patients will be less liable to manifest irritation during divine service.

"11. That cases of obstinate refusal to comply with rules and directions, as well as instances of persevering refusal of food, and of attempts to commit suicide, will become less frequent.

"12. That improvement will be more readily effected in patients recently admitted, who will be less alarmed and less excited on admission, and sooner acquire confidence in those about them.

"13. That the abolition of restraints cannot be successful without a vigilant and constant superintendence exercised by a competent number of attendants, under the direction of officers zealously united in the determination to meet every variety of difficulty by every possible resource that may render bodily coercion unnecessary.

"14. That the attendants most attached to the use of restraints will be the least alert in carrying these resources into practice, and the most prone to use secret violence, and to abuse seclusion, until it becomes as objectionable as restraint itself.

"15. That in a properly arranged asylum, with efficient officers and attendants, acting under one uniform system, scarcely any conceivable case can occur in which the security, cleanliness, and comfort of the patient may not be provided for, and the safety of all the other patients secured without mechanical or bodily restraint, and with fewer troublesome consequences than when restraints are employed.

"16. That to effect these objects it is not necessary that the number of attendants should be extravagantly great. At Hanwell it is only in the proportion of one attendant to eighteen patients. But the arrangements must be such that the patients are never left unattended during the day. It is by no means indispensable that the attendants should possess unusual bodily strength. The first requisite is that they should be humane, without which they will never gain the good opinion and confidence of the patients. They must be capable of acting with great patience, and also with firmness and courage. It must be strongly enforced upon them that it is their business to *prevent* mischief, and not to punish it. They must be habituated, when all arts of persuasion fail, and some point of obedience *must* be enforced, to act steadily and systematically together, so as to effect the end with promptness and certainty without provoking words and without a prolonged struggle. Whenever they are required to collect in a certain number, for the purpose of secluding a dangerous patient, they must assemble quickly and quietly, must avoid harassing the patient by controversy and useless contradiction, and, having accomplished the purpose which brought them together, must disperse as quietly as they came. These are directions continually acted upon at Hanwell; and the plan has a considerable effect on the patients, who are perfectly aware that they will not be unnecessarily interfered with, but that when interference is necessary it is sure to be effectual.

"Such are the results of the present experience of the resident physician, gathered in two watchful years, and more strongly confirmed as the experiment has proceeded. He has reason to believe that the experience of other medical observers, residing like himself constantly among the insane, and well acquainted with the state of their particular asylums by night as well as by day, is, as far as it has yet extended, precisely of the same kind.

"General Treatment.—The quality of management which a careful superintendent will be continually learning in a lunatic asylum is *forbearance*. Scenes presenting at first sight an aspect of confusion and violence, are generally found to resolve themselves into simple elements if calmly surveyed for a few minutes. Furious gestures, threatening language, and abusive epithets, if not met by irritable and angry measures, commonly subside in a short time. Determinations of disobedience, apparently the most resolute, often yield to continued and calm persuasion. To all these events there are exceptions; but the exceptions will probably be always the least numerous with superintendents, officers, and attendants who preserve the most command over themselves. Firmness and determination may be even often required, but anger or passion always leave an uncomfortable impression that they have been at least superfluous. In these respects the resident physician has observed a considerable improvement in the ward-attendants since the disuse of restraints. The frequent imposition of hand-locks, or the muff, or the strait-waistcoat, or leg-locks,—the difficulty with which they were put on a violent patient,—the anger this imposition excited against the attendant, especially when put on, as was often the case, needlessly and unjustly, placed many of the patients and attendants in a state of continual hostility to one another. The attendant never spoke well of the patient, and the patient always complained of the attendant. At this time the patients in the refractory male wards are not unfrequently to be seen grouped round an attendant, who plays some instrument for their amusement; and patients, violent at other times, afford essential occasional protection to the attendant, when suddenly taken at disadvantage by some other violent patient. In the female refractory wards, the patients are usually found either assembled round a work-table with the nurses, or sitting by them on benches in the airing court, or riding with them on the rocking horses. In both the male and female wards there is an appearance of a good feeling between the patients and attendants; and when it is necessary to use some force, either to ensure seclusion, or to administer a bath, it is done after long attempts at persuasion, with a quietness, promptness, and efficacy, by which the patient is taken by surprise, and obedience ensured without anything being done which gives the patient much offence.

"Although the number of ward-attendants is much smaller than in some other asylums, in proportion to the number of patients, the general appearance of the wards and of the patients sufficiently attest their efficiency as regards the preservation of

cleanliness and order; an effect secured by accumulating attendants in wards containing patients who are violent or dirty. Yet it is to be regretted that the necessity thus created of assigning 50 patients to two attendants in some of the quieter wards should deprive some of them, as it can scarcely fail to do, of attentions to which they would be peculiarly sensible. It is scarcely to be supposed that attendants having the care of so many patients, for whose cleanliness, as well as that of the gallery and numerous bedrooms, they are held entirely responsible, and who have to attend their patients at every meal, can have sufficient energy remaining to employ the intervals between their various household duties, in devising or applying mental or moral resources of treatment to those under their charge.

"A mere change of attendants has been found, in several instances, to be followed with advantages greater than were expected. The character of a ward seems almost wholly to depend on the character of the attendants. A description of the duties of the ward-attendants has been lately printed in the form of a manual, appended to the report of the visiting justices, in which the duty of every hour of the day, and of every day in the week, is precisely laid down. Strict observance of these rules is expected, and the general regularity of the house is most satisfactory.

"Whatever may be the ability, zeal, or activity of those at the head of an asylum, they must always so much depend on the fidelity and good conduct of the male and female attendants, that it is scarcely possible to be too considerate of whatever tends to keep them in bodily and mental health. Unless they are cheerful and active, and well disposed towards the officers of the asylum, their services to the patients will be inefficiently performed. They are expected to exercise great vigilance for at least fourteen hours every day, and to take their turn of night-watching. No reasonable relaxation, therefore, should be withheld from them; and their lodging, provisions, and every arrangement regarding them, should be calculated to preserve the habits and manners of respectable life, without which they are not likely to understand or execute some of the most important of the duties required of them. The resident physician feels it to be important to allude to this subject, in consequence of having experienced, first, the impossibility of conducting the asylum properly with attendants whose attainments, manners, dress, and language, were those of the lowest class of servants; and, secondly, the facility with which regularity may be maintained, even in a very large asylum, by means of an entirely different class of assistants, encouraged by a more liberal remuneration.

"Religious Services.—Since the appointment of the Reverend J. T. Burt to the office of chaplain, some alteration has been made as regards the daily religious services; the hour of the evening service, except on Sundays, being six o'clock, instead of half-past nine. This change enables many patients to attend every evening, as well as every morning at eight. Each service is commenced by three verses of a hymn or psalm being sung by the congregation, accompanied by the organ. The chaplain has also been kind enough to attend to a suggestion of the physician that an occasional short service should be read to the feeble and infirm patients in the infirmaries who are unable to reach the chapel. The services on Sundays remain unaltered, and take place at eleven and half-past three; each service lasting one hour. In the morning, the prayers of the Church of England are read, and in the afternoon, a portion of the afternoon service, and a sermon. It seldom happens that any irregularity of behaviour occurs among the patients during these services. Most of them observe a demeanour that would become any place of worship; and join in the responses and singing, and pay attention to the sermon. On Sunday, October 10th, the sacrament was administered for the first time since Mr. Burt's appointment, and the number of communicants was sixty, of whom fifty were patients.

"It affords the resident physician much satisfaction to be able to say that the kind and judicious co-operation of the chaplain, and his frequent and unreserved communications, are such as to inspire him with the fullest confidence that the ministerial offices performed in the asylum are carefully adapted to patients so peculiarly afflicted; and administered in a spirit so temperate, earnest, and sincere, as to extend their benefits to every case in which prudence can permit a trial. Long experience can alone determine the cases to which religious attentions are applicable: they are

sometimes beneficial where advantage was scarcely hoped for, and sometimes excite when no excitement was expected. They are also not equally applicable to the same patient at all times. Nothing can meet the various difficulties incidental to such delicate trials, except the constant and confidential communications of the physician and chaplain to each other. If the physician may sometimes prevent mischief that might arise from an ill-timed religious appeal, the chaplain is sometimes enabled by his intercourse with the patients to demonstrate that the influence of his spiritual conversation is deeper and more permanent than the physician might expect. By their continual co-operation alone can the zeal, judgment, and experience of both be so combined and directed as to throw light on a subject which, independently of its serious importance in a religious point of view, is connected with the interesting psychological question of how far the feelings and understanding may act and be acted upon in the various shades of mental disorder;—how far, when the mental state disqualifies for worldly duties and pursuits, the affections and the vestiges of reason enable the afflicted lunatic to look up to his Creator. Experiments in relation to this important subject do not yet appear to have been made on a sufficiently extensive scale either to justify enthusiasm or despondency. It is not improbable that future reports may contain some interesting particulars relative to a subject on which at present very little seems to be known.

"Like every other part of a system that appeals to what remains of the reason and the feelings, a perfect trial of what could be effected by spiritual means was incompatible with modes of treatment which produced gloom, discontent, or ferocity. The ordinary public services at Hanwell were much more liable to interruption before the disuse of mechanical restraints; and on looking back to the instances of disturbance which then occurred, it is curious as well as instructive to remember, that the patients who interrupted the services by noise or violence, were almost always such as had been the especial subjects of mechanical restraint. At that time Sunday was a day of more than usual anxiety; whereas there is now no day in which the aspect of the whole asylum is more tranquil and comfortable. The attendants of the patients assemble for chapel neatly dressed; the congregation is usually about 300; and when the services are concluded, the patients may be seen walking down the galleries which lead from the chapel, as orderly as any crowd in a church-way path. Although they have no work to occupy them on Sundays, they may be seen sitting composedly in their wards after the service, or taking their dinners with every appearance of order and comfort. All such general descriptions are liable to occasional exceptions. One noisy patient may disturb fifty patients; and the paroxysms of mania may occur on Sunday as on any other day; but the general character of the house on Sundays is certainly such as is above described.

"The interruptions of illness have during the last year made the resident physician more than usually dependent on the activity and fidelity of the officers and servants of the asylum; and he wishes he could efficiently express his grateful acknowledgments to each and all of them. It is a source of great satisfaction to believe that there is not an officer or attendant in the whole of the numerous establishment who is, at this time, disposed in any way to impede the general and well-known design of the resident physician. From every department,—the medical, the economic, the household, he receives uniform and valuable support.

"Several of the present visiting justices being now about to resign their office, the resident physician hopes he may be permitted to assure them that he shall never cease to reflect with satisfaction on the period when he had the honour, with their support, to adopt, and carry on a system of management which he believes to be founded on correct principles, and to the gradual extension of which, more or less modified, to many or to all other asylums, public or private, he looks forward with confident hope.

"J. CONOLLY."

[It would be doing great injustice to the Committee of County Magistrates who visit the Asylum, not to state how zealously they have seconded the efforts of Dr. Conolly in carrying out his plans for the regeneration of Hanwell, and—it

may be truly said—of lunatic asylums in general. In his own statement, Dr. Conolly gratefully acknowledges their countenance and support; and the following extracts from their "Fifty-ninth Report," in which that of the resident physician is included, prove how well entitled they are to a share of that great honour which the glorious spectacle now exhibited at Hanwell confers on all concerned in its production.]

Extracts from the Justices' Report.

"At the Michaelmas quarter sessions of the last year, a question arose, as to whether the system which had been adopted by the resident physician of the Asylum at Hanwell, and had been sanctioned by the visiting justices, had not been carried out in too rash and unqualified a manner to be practically safe. Such were the conflicting opinions entertained upon this question by intelligent men, that it was then resolved, by the magistrates assembled, to intrust the control of the asylum to the same visiting justices for another year, and to postpone any decision upon the subject, if a decision might be necessary, until the court could have the benefit of the longer experience and the more matured judgment of its committee. It was impossible to doubt the propriety of the course which was then resolved upon, and the visiting justices felt it to be their duty to enter once more upon the trust which was confided to them, of watching, with calm and unprejudiced minds, the practical working of the system; prepared, on the one hand, to give it their steady support, should the further examination of the facts which might come under their notice bear out their favorable opinions, or, on the other hand, so to modify it, as to remove the reasonable objections of those who deemed it to be both theoretical and dangerous.

"The points upon which the visiting justices have specially to report are, whether, in the management of the patients at Hanwell, the mechanical means heretofore employed in restraining violence, or in preventing accidents, can be altogether dispensed with without great danger to the insane or to their attendants; and whether there may not be more of actual cruelty hidden under the show of humanity in the system of non-coercion, than was openly displayed in muffs, strait-waistcoats, leg-locks, and coercion chairs. Both of these are very serious and important questions to answer, the one involving the personal safety of the patients, and the other their personal comfort, which all along the committee had been studiously endeavouring to promote.

"It is quite clear that had the choice been between constant personal restraint as a preventive against accidents or dangerous violence, and no restraint at all, the question might easily be answered. It belongs especially to the malady with which the insane are afflicted, that they are uncertain and capricious in their actions; that they are liable, with little or no apparent cause, to paroxysms of fury, that there are strong suicidal tendencies to be found among them, and in the cases of the idiotic and the epileptic, that their very helplessness is frequently a source of danger. Against these it is impossible at all times to guard so effectually as to afford absolute and perfect security, except it be by the application of the most rigorous mechanical restraint, and that without intermission. Every relaxation of this mode of management, must, from the very uncertain nature of the disease, be attended with some degree of danger. This is inevitable, and if every other consideration of a far higher nature must be sacrificed to perfect security from all danger, such selfish views can only be realized by reverting to the practice of past times and of a barbarous people, when the insane were chained and beaten as if they were wild animals, who had nothing of humanity remaining but the outward form; and when the idiotic from whom nothing was to be feared, were left to roam at large uncared for, and unprotected. But the question is the comparative security of two plans, both of them necessarily imperfect; the one, imperfect from the occasional intermission of mechanical coercion, at times possibly when it might be most required, and the other, from depending chiefly upon moral means for security, and not at all upon instrumental restraints. That the former plan offers but a very imperfect safeguard against dangers of every kind is put beyond a doubt, by the instances of suicide, and attempts at suicide, of violence, attended with fatal or serious consequences, and of accidents, which are to be found in the records of every institution, including from its commencement those of the asylum at Hanwell.

"But do the means which are now adopted at Hanwell offer an equal security against the dangers to which every institution, and especially every large institution for the insane is liable? Are they sufficient to guard, not with absolute certainty, but with reasonable hope against danger, equal at least to the mode of management for which it has been substituted? The visiting justices beg to answer distinctly in the affirmative; and to state, as the result of their experience, that notwithstanding the many obstacles with which the non-restraint system has had to struggle, notwithstanding the difficulties which have unavoidably attended the transition from one system to another, notwithstanding all these, and even more than these obstacles by which the means have been materially weakened that were relied on for complete success, that success has fully equalled their hopes, and has presented advantages, which in their opinion more than compensate the imperfections to which every human contrivance is liable.

"The committee conceive it must be obvious to every one, that whatever means can be applied to cheer and divert the minds of the patients, must at the same time tend to awaken their susceptibility to kindness, increase the moral control of the officers who contribute to their enjoyment, and in the same proportion diminish the necessity of governing them by brute force and by mechanical restraints. In fact, no such necessity has arisen in any one instance during the present year, any more than during that which is past, and it is not unreasonble to ascribe it to these among other means which have been employed in bringing about so desirable and, to some, so unlooked-for a result.

"And yet it has been supposed that there is actually more of cruelty in this system, under the guise of humanity, than in that which was partly carried on by instruments of coercion! To this the visiting justices would beg in reply to say, that they can detect no grounds for so serious an imputation. If it had altogether failed, and by its failure entailed unnecessary sufferings upon the patient, then indeed it might possibly be open to such a charge. But such is not the case. It has not failed, but has succeeded; and the visiting justices have perhaps one of the best proofs of its success in the testimonies of the patients themselves when they are restored to health, and are fully alive to the comforts and advantages which they have enjoyed under it. The committee are accustomed, on their appearing before them to receive their discharge, to examine them as to the degree of consciousness they possessed during their malady, and it has been found that their consciousness, and their recollection of what had passed, were much more distinct and perfect than might be supposed. In answer to enquiries as to whether they were satisfied with their treatment, and whether they had anything to complain of, they have uniformly, with but one exception, where a female complained of having been once struck on the face by a nurse, expressed themselves perfectly satisfied with the kindness and attention they had received, and in some instances in such feeling terms as to convince the visiting justices that kind treatment is not lost upon the insane, but is distinctly and gratefully recollected when they are restored to reason.

"Strengthened in their deliberate judgment by men of great eminence in the profession, both natives and foreigners, and by the example of other public institutions, and especially of the large asylum for the insane in the county of Lancaster, which contains between five and six hundred patients, and in which, under the direction of Dr. de Vitre, the physician, and of Mr. Gaskill, the surgeon and superintendent, 'watchfulness, care, and ingenuity,' in the words of their report for this year, 'are now employed as substitutes for the instruments of coercion;' strengthened by these, and by the approach to a better system which is at this time being gradually made in several of our great establishments for the insane, the visiting justices conceive that their experience fully authorizes them in reporting thus favorably of the system to the court, and in earnestly recommending its continuance to their successors.

"CHAS. AUG. TULK, Chairman."

BOOKS RECEIVED FOR REVIEW.

ENGLISH.

1. The Oily Acids, forming the first Supplement to the Seventh Edition of Dr. Turner's Chemistry. 4s.

2. A Practical Treatise on the New Operation for Lateral Curvature of the Spine. With plates. By G. B. Childs, M.R.C.S. —London, 1841. 8vo, pp. 56. 4s.

3. A Concise and Practical Treatise on the principal Diseases of the Air-passages, Lungs, and Pleura. By A. Catherwood, M.D. C.M. (?)—Lond. 1841. 8vo, pp. 208. 7s. 6d.

4. Pathology founded on the Natural System of Anatomy and Physiology; a Philosophical Sketch. By Alexander Walker.—Lond. 1841. 8vo, pp. 162. 5s. 6d.

5. Oratio in theatro Collegii regii Medicorum Londinensis, in Harveii instituto habitu die. Julii XXV., An. M.DCCC.XLI. A Thoma. Mayo, M.D. Lon. 1841. 4to, pp. 16.

6. Guy's Hospital Reports. No. XXX. Oct. 1841. 6s.

7. Clinical Researches on Auscultation of the Respiratory Organs, and on the First Stage of Phthisis. By J. Fournet. Translated from the French by T. Brady, M.B. —London. 8vo, pp. 227. 7s.

8. The Diseases of Children, their Symptoms and Treatment; a Treatise intended for the use of the Student and Junior Practitioner. By G. A. Rees, M.R.C.S.—Lond., 1841. 8vo, pp. 300. 5s.

9. A Treatise on the Nature, Causes, and Treatment of Erysipelas. By T. Nunneley, Lecturer of Anatomy at the Leeds School of Medicine.—London, 1841. 8vo, pp. 307. 10s. 6d.

10. Principles of General and Comparative Physiology, intended as an introduction to Human Physiology, &c. By W. B. Carpenter, M.D., Lecturer on Physiology at the Bristol Medical School. Second Edition.—London, 1841. 8vo, pp. 577. 18s.

11. Illustrations of the Nervous System. By Joseph Swan. Part VII. and last.—London, 1841. 10s. 6d.

12. The Anatomy of the Arteries. By Richard Quain, Prof. of Anatomy in University College. Part IX.—Lon. 1841. 12s.

13. Researches into the Causes, Nature, and Treatment of the more prevalent Diseases of India, and of warm climates generally. By James Annesley, F.R.S. F.S.A. 2d Edit.—Lond., 1841. 8vo, pp. 606. 12s.

14. On the Remote Causes of Epidemic Diseases. By John Parkin, M.D., &c.—London, 1841. 8vo, pp. 198.

15. Treatise on the Oleum Jecoris Aselli, or Cod Liver Oil, as a therapeutic agent in certain forms of Gout, Rheumatism, and Scrofula; with Cases. By J. H. Bennett, M.D., &c.—London, 1841. 8vo, pp. 180. 6s.

16. Observations on the Analogy between Ophthalmic and other Diseases: being the substance of a paper read at King's College, London. By Charles Vines, M.R.C.S., Surgeon to the Reading Dispensary.—London, 1841. 8vo, pp. 32.

17. Surgery. From the Seventh Edition of the Encyclopædia Britannica. 4to, pp. 26.

18. Six Letters addressed to the President of Bethlem Hospital, respecting the Management of that Establishment. By Philanthropos.—London, 1841. 8vo, pp. 30. 1s.

19. Outlines of Comparative Anatomy. By R. E. Grant, M.D. F.R.S., &c.—London, 1841. 8vo, pp. 656. 28s.

20. On the present State of the Medical Profession in England; being the Annual Oration delivered before the Members of the British Medical Association. 21st Oct. 1841. By R. E. Grant, M.D. F.R.S. L. and E. —London, 1841. 8vo, pp. 98. 2s. 6d.

21. A Manual of General Therapeutics; with Rules for Prescribing, and a copious Collection of Formulæ. By D. Spillan, M.D. A.M.—Lond. 1841. 8vo, pp. 458. 10s. 6d.

22. An Examination of Reviews contained in the British and Foreign Medical Review, and the Medico-Chirurgical Review, of the Medical and Physiological Commentaries. By the author, Martin Payne, M.D.—New York, 1841. 8vo, pp. 96.

23. Elements of Chemistry. By R. Kane, M.D. M.R.I.A.—Dublin, 1841. 8vo, pp. 1204. 24s.

24. The Influence of Tropical Climates on European Constitutions. By James Johnson, M.D., and J. R. Martin, Esq. Sixth Edition, revised and greatly improved. —London, 1841. 8vo, pp. 693. 18s.

25. Pilgrimages to the Spas in Pursuit of Health and Recreation; with an Inquiry into the Comparative Merits of different Mineral Waters, the Maladies to which they are applicable, and those in which they are injurious. By James Johnson, M.D.—London, 1841. 8vo, pp. 299. 9s.

26. Elements of Physiology. By J. Müller, M.D., &c. Translated from the German, with Notes, by William Baly, M.D. With plates. (Complete.)—London, 1842. 2 vols. 8vo, pp. 1715. 2*l.*

27. Elements of the General and Morbid Anatomy of Man and the Mammalia. By F. Gerber, Prosector of the Universities of Bern. With Notes and an Appendix by George Gulliver, F.R.S.—Lond. 1842. 8vo, pp. 390 and 106. With a vol. of plates. 24s.

28. On the Employment of the Microscope in Medical Studies. A Lecture introductory to a course of Histiology. By J. H. Bennett, M.D.—Edin., 1841. 8vo, pp. 27.

THE

BRITISH AND FOREIGN MEDICAL REVIEW,

FOR APRIL, 1842.

PART FIRST.

Analytical and Critical Reviews.

Art. I.

1. *Histoire Statistique et Morale des Enfans Trouvés, suivie de cent Tableaux.* Par J. F. Terme et J. B. Monfalcon.—*Paris et Lyon*, 1837. 8vo, pp. 504.

An Historical Account of the Statistics and the Moral Condition of Foundlings; to which are added a Hundred Tables. By J. F. Terme and J. B. Monfalcon.—*Paris and Lyons*, 1837.

2. *Nouvelles Considérations sur les Enfans Trouvés.* Par J. F. Terme et J. B. Monfalcon.—*Lyon*, 1838. pp. cviii.

Further Considerations upon Foundlings. By J. F. Terme and J. B. Monfalcon.—*Lyons*, 1838.

3. *Des Hospices des Enfans Trouvés en Europe et principalement en France, etc.* Par B. B. Remacle.—*Paris*, 1838. 8vo, pp. 405.

On Foundling Hospitals in Europe and principally in France, from their origin to the present day. By B. B. Remacle.—*Paris*, 1838. *With a quarto volume of Official Statistical Documents.*

4. *Recherches sur les Enfans Trouvés, les Enfans Naturels, et les Orphelins en France, etc.* Par L'Abbé A. H. Gaillard.—*Paris*, 1837. 8vo, pp. 400.

Researches into the Statistics and the Moral Condition of Foundlings, Illegitimate Children, and Orphans, and the laws respecting them in France, and in many other countries of Europe. By the Abbé A. H. Gaillard.—*Paris*, 1837.

The attention of our continental neighbours has recently been directed to the improvement of their laws for the relief and support of the poor. Among the subjects connected therewith, none has given rise to greater difference of opinion than that of the provisions to be made for deserted and illegitimate children, and the means to be employed in order to check, if possible, the yearly increase in their numbers. In order to solve this problem it was necessary to investigate many questions more or less nearly connected with our art, and all of which present great interest to

the man of science. We therefore need make no apology for presenting to our readers a brief account of the Foundling system in France.

Our readers are doubtless aware that, in France, as in all Catholic countries, the wants of the needy are supplied from other sources, and by means quite different from those resorted to in most Protestant lands. Foundling hospitals, intended to provide for the support of deserted children, and to open to unmarried females an asylum where the child would be cared for and the mother's shame hidden, form an important feature in the system of Catholic charity. Public opinion in England has declared, rightly as we think, against these institutions; but still it was a noble thought to cover the sins and frailties of the weak or the wicked with the mantle of charity, and to obviate the consequences of those vices which religion was not strong enough to root out.

Magdalenism and foundling hospitals were the offspring of the middle ages; and at a time when the darkest ignorance prevailed, and Christianity was most corrupt, charity was busied with works such as were never dreamt of in the most enlightened days of Greece and Rome. The induction of abortion was almost universally practised at Rome; infanticide was extremely common, and desertion of children was practised by persons in all ranks of life. But there was no foundling hospital at Rome; and no one saved the lives of these poor infants, except wretches who after having blinded or mutilated them, sent them to beg in the streets, and lived on their earnings. And these things were done in the days of Augustus Cæsar, of Cicero and Virgil.

The early Christian emperors endeavoured to diminish the frequency of infanticide, but the sources of the evil lay too deep to be reached by the mere denouncement of punishments against the crime. The condition of foundlings, however, was somewhat improved, since they no longer became the property of any one who cared to rear them, while Justinian even founded institutions for their support. Of the exact nature of these *Brephotrophia* we are ignorant, but they continued to exist, and the laws of Justinian remained in force, until the fall of the Eastern empire.

In order to form a correct estimate of the charitable institutions of the middle ages we ought to bear in mind the condition of society at that time. Not only did the most profound ignorance pervade all ranks, but universal depravation of morals had reached a point of which it is almost impossible to form any conception. At the same time wretchedness and want were wide spread and extreme. Parents were driven by absolute destitution to destroy or abandon their new-born infants, or they sold their children into slavery to procure bread for themselves.* A cold, calculating charity, fearing to succour the wretched lest indiscriminate relief should minister to idleness, or which would withhold help from perishing infants lest mothers should forget their duty to their children, could in those days have done no good. Christianity inculcates mercy, it teaches us to clothe the naked and feed the hungry, while we are not so pure that we can be our brother's judges, or refuse to relieve distress because by so doing we may support the unworthy. Such was the creed†

* The moral state of society in the middle ages is fully displayed in Meiner's Historische Vergleichung der Sitten, &c. des Mittelalters.—Hannover, 1793. Band i. Abschn. iv.

† The influence of religion on the mind in the middle ages is very eloquently set forth by Cibrario, Della Economia Politica del Medio Evo. Lib. ii. cap. i.

which made the church in western Europe the protectress of foundlings. A marble vessel stood outside the church door where women were encouraged to place their children, and to those who would have died of hunger and want, shelter was thus given and a nurse to tend them. For this support indeed they paid the price of their liberty, becoming the property of the *nutricarii* who brought them up, or else the serfs of the church which had defrayed the expenses of their education. But neither the relief afforded by the church, nor the benefactions of charitable individuals, nor even the hospitals in one or two large towns, as at Milan and Sienna, were sufficient to meet the growing evil.*

The stirring times of the Crusades brought with them many benefits, among which the institution of the orders of Hospitallers† was by no means the least. Their duty was to entertain strangers and pilgrims, whom some of their body were bound to defend from danger, to visit and relieve the poor and the sick, or to receive them into the hospitals, and to provide for orphans and deserted children. None of these societies, however, devoted themselves to the care of foundlings so zealously as the brotherhood of the Holy Ghost, which consisted at the time of its foundation, like the other orders of Hospitallers, principally of lay members. Guy of Montpellier, who had founded an hospital in his native city, was appointed master of it, as well as of the hospital *Santo Spirito in Sassia*, at Rome, on the incorporation of the society in 1204, by Pope Innocent III. It was supported by voluntary contributions levied throughout Christendom, and at one time houses of the order existed in almost every country of Europe.‡ As abuses, however, crept into these institutions, they were either suppressed or at any rate entirely diverted from their original purpose, and the lot of the foundlings became in consequence much worse. The law of France indeed declared them to be free, but the regulations which it made for their maintenance were by no means effective, and after the overthrow of all charitable institutions during the wars of the League, the resources of the church were quite inadequate to their support. Foundlings in Paris were laid on a couch at the entrance to the cathedral of Notre Dame, and a priest stood by who cried to all that passed, "Bestow your charity on these poor foundlings."

This state of things continued till near the middle of the seventeenth century; and in the brilliant days of Cardinal Mazarin and Anne of Austria, new-born infants might be seen dead or dying in the streets, or taken out of the Seine by the police. Madame Legras, a benevolent widow, turned her house into a foundling hospital, and, assisted by her two servants, provided for as many as her means would allow. At her death she left money to endow the institution, but the persons who succeeded her in the charge of the hospice abused their trust, neglected the

* A very elaborate account of the hospitals and charitable institutions of the middle ages will be found in Krüger's Archiv für Waisen und Armenerziehung.—Hamburg, 1825-8. Unfortunately the work was never completed, and the historical notices do not come lower than the foundation of the hospital at Milan in 787.

† For an account of the Hospitallers before they degenerated into military corporations, see Ersch und Gruber's Allgemeine Encyklopädie der Wissenschaften und Künste. Art. Hospitalliter.

‡ The laws of this and of the other orders of Hospitallers, and a sketch of their history, will be found in Brockie's Codex Regularum Monasticarum et Canonicarum, &c. Augustæ Vindel, 1759. Tom. vi. folio. For the regulations of the order of the Holy Ghost, see tome v. p. 495.

children, and even sold them for the paltry sum of twenty sous. Curiosity led St. Vincent de Paul to visit the hospice; he was shocked at the sight, and having called together some charitable ladies, begged them to assist him in forming an hospital for foundlings. In 1638 they hired a small house for twelve children; but, meeting with the patronage of the king and queen, they were soon enabled to operate on a larger scale. It was not, however, until 1670, some years after the death of St. Vincent de Paul, that the Hospice des Enfans Trouvés was declared to be one of the hospitals of Paris. Its fame soon spread, children were sent to it from all parts of France, and similar institutions were formed in some large towns. Still no adequate provision was made for the support of foundlings throughout the country, and disputes, in which the infants were invariably the sufferers, frequently took place between the communes and the lords justices, as to the duty of providing for them.

The revolution of 1789 put an end to these disputes. All foundlings were now placed under the uniform protection of the law, and hospices were ordered to be opened throughout France for their reception. It was declared an honorable distinction to be the mother of a bastard child,* and the state made large promises of the care it would take for the education of these "*enfans de la patrie.*" The financial difficulties of the country, however, rendered the fulfilment of any of these promises impossible. The Sisters of Charity too had been driven away, and the interior of the hospices presented a scene of gross mismanagement and utter confusion. A better order of things was introduced when Napoleon ascended the throne. The Sisters of Charity were recalled in 1804, and the provisions for the support of foundlings were made the subject of an imperial decree in 1811. In most points this decree confirmed the enactments of the republic, but, by directing the establishment of a *tour* † at every hospice it introduced a system of secret and uncontrolled admissions, against which many of the provincial administrations remonstrated. Their remonstrances, however, were of no avail, since Napoleon wished to afford every opportunity for the increase of foundlings, whom he regarded as a source of future armies, free from all the evils of conscription. A clause by which the emperor placed them at the disposal of the minister of the marine on attaining their twelfth year, thus reducing them to a state of military servitude has never been carried into effect. But, previous to the recent modifications in the law, the institutions for the support of foundlings were, in all other respects, regulated in accordance with the decree of 1811.

Various causes have concurred of late to excite enquiry into the working of these institutions in France. The attention of some has been arrested by the evidence of a growing deterioration of morals which is afforded by the progressive increase in the number of foundlings. The political economist has been alarmed by an annual expenditure of eleven millions

* Gaillard, p. 93.

† The Tours or turning boxes are an Italian invention of the time of Pope Sixtus IV. Their use was for many years confined to the hospice at Rome, which thence derived its name *Della Ruota*. In France they are formed by a hole in the wall of the hospice, closed with double doors, between which a cradle is placed. The act of opening the outer door to deposit a child in the cradle causes a bell to ring which gives notice to the attendant in the hospice. Or sometimes a cylindrical box placed perpendicularly and turning on a pivot is used, and this was the original form of the Tour.

of francs, which burdens the country, and leaves no money disposable for other purposes: and the physician, looking at a different feature in the case, sees equal cause for regret in the fact that, notwithstanding all this expense, the mortality is almost as great as it was fifty years ago, and that nearly 60 per cent. of the children die within a year after birth.

The works at the head of this article are some among many which have been written in order to explain these startling facts, to point out the sources of the growing evil, and to suggest a remedy. They were elicited by the offer of prizes made by various societies in France for the best essays on the subject. The treatise of MM. Terme and Monfalcon received in 1838 the honorable distinction of the Monthyon prize of the French Academy. The essay of M. Remacle and that of the Abbé Gaillard have each likewise been crowned by other societies. The work whose title stands first on our list seemed to us to claim that position by the diligence and research which it displays, by the thorough acquaintance of its authors with all the practical details of the subject, by their clear arrangement, lucid and elegant style, and by the candour with which they treat the opinions of others. The treatise of M. Remacle likewise possesses very considerable merit, though it must yield in completeness to the other two, since some points, such as the internal organization and hygiene of an hospital, the circumstances influencing the mortality of the children, &c., are altogether omitted, and others are treated of but very slightly. It is to the mode of admission into the hospital that he especially directs his attention, and, in common with M. Terme and his coadjutor, he decides most positively against the *tours* being any longer employed. The Abbé Gaillard appears as the warm apologist of the *tours*, the maintenance of which he looks upon as absolutely essential to the utility of foundling hospitals. His book displays great research, and contains much valuable information, though not always well arranged. He too supports his opinions by statistical tables, but these are often composed of numbers too small to be entitled to much weight, or are open to the charge of telling only part of the truth. But, in spite of these drawbacks, it is a most valuable storehouse of facts on the subject of foundlings, and reflects great honour on its author.

We are so used in this country to hear foundling hospitals stigmatized as absurd and mischievous in the extreme, that it may at first excite our surprise to find none of these gentlemen proposing to do away with them. An establishment "which may safely be termed a great public nuisance leading to unchaste life and to child-murder, beyond any other invention of the perverted wit of man,"* could hardly have been expected to find an apologist. But we shall see in the sequel that both of these charges are unfounded, and that many of the objections made to these institutions apply to their maladministration rather than to any vice necessarily inherent in them. We do not advocate the establishment of foundling hospitals; on the contrary, we believe them to be injurious, because they have no influence on those evils which they were instituted to prevent; because the relief they proffer can be obtained only by a deliberate sacrifice of the best feelings of our nature; because they are liable to abuses which it is almost impossible to prevent; and because, while they entail a

* Edinburgh Review, No. 76, p. 440.

great expense upon the country, they preserve the lives of but a very small proportion of their inmates.

Our limits will not allow us to investigate the subject in all its bearings. We will therefore endeavour to give our readers a sketch of its most important features, taking for our authorities, as we have done hitherto, the works whose titles we have given above, except when by references at the foot of the page, we intimate that we have derived our facts from other sources.

The point which will naturally first claim our attention is the extraordinary and progressive increase in the number of children at the charge of public charity in France. This number, which was estimated by M. Necker at 40,000 in the year 1784, amounted in 1798 to 51,000; had reached to 97,919 in 1818; and on January 1, 1834, had actually increased to 129,669. But this fact, at first so overwhelming, wears a much less grave aspect if we bear in mind, that before the year 1789 the number of children at the charge of the Lords Justices was unknown, no record of them being kept. The public, too, had then no legal claim to the benefits of the hospices, which were supported by the charity of private individuals or of the church, or by occasional grants from the king. Matters were of course greatly changed when the hospices were converted into national institutions, and when instead of being confined to a few large towns several were established in every department of the country. Moreover, it is the number of children admitted every year into the hospitals, not of those annually at the charge of the state, to which attention should be directed. The former alone illustrates the moral condition of the people; the increase of the latter may be simply indicative of the diminished mortality of the foundlings. Before the year 1824, however, no official documents stated the annual number of children exposed, as compared with the total births in the country, and we are now furnished with the results only of the decennial period from 1824 to 1833.

	Years.	Legitimate Children born in the whole of France.	Births of Illegitimate Children.	Total number of Foundlings and Deserted Children admitted into the Hospices.
First quinquennial period.	In 1824	912,978	71,174	33,792
	1825	904,594	69,392	32,278
	1826	920,720	72,471	32,876
	1827	909,428	70,768	32,504
	1828	905,843	70,704	33,749
		4,553,563	354,509	165,199
Second quinquennial period.	In 1829	895,176	69,351	33,141
	1830	898,577	69,247	33,431
	1831	915,298	71,411	35,884
	1832	870,509	67,677	35,435
	1833	898,485	71,468	33,191
		4,478,045	349,154	171,082
Total of the 10 yrs.		9,031,908	703,663	336,281

The proportions resulting from this table are:

FOR THE FIRST FIVE YEARS.	FOR THE LAST FIVE YEARS.
1 illegitimate birth to 13·85 total births	1 illegitimate birth to 13·83 total births.
1 child abandoned to 29·71 do.	1 child abandoned to 28·22 do.
1 child abandoned to 2·15 illeg. births	1 child abandoned to 2·04 illegitimate births.

The increase then in the annual number of foundlings is not only very slight when compared with the population, but occurred almost entirely during the two years of trouble which followed the revolution of 1830: we shall hereafter see that times of distress or famine almost invariably produce a similar effect.

The table we have just given shows that during 10 years there has been no perceptible increase in the proportion of illegitimate children to the population throughout France, and the past 30 years yield nearly the same result. The works before us indeed all concur in stating that the proportion of illegitimate children is much greater now than it was at the beginning of this century. M. Remacle estimates their number at one in 20 of the total births at the beginning of this century instead of one in 13 or 14 as at present. Even allowing this to be the case, we do not think that any conclusion unfavorable to the morality of the French people could fairly be deduced from it. The conscriptions which drained France of its young men during the first ten or twelve years of the nineteenth century, would sufficiently account for the small proportion of illegitimate children when compared with the numbers presented in after years. But we do not hesitate to reject the numbers upon which this calculation is founded, for Sir Francis d'Ivernois* has shown how little they are to be trusted. It appears from that gentleman's researches, that the official documents respecting the population under the consular and imperial governments are not entitled to any credence. They were deduced from registers of two millions of individuals only, to which a process was applied founded on some erroneous notions of Laplace. These results, though proved to be incorrect by a report made to government in 1801, and afterwards published without authority, as well as by the census of the population, were nevertheless printed as official documents. The reason of this was that they favoured an extraordinary and successful *persiflage* of Napoleon, who persuaded the French that wars and conscriptions had a direct tendency to multiply marriages and to increase the population of the country. Since the year 1816 the number of illegitimate births has continued nearly stationary at 1 in 14 or 7 per cent., while the increased number of marriages, with the smaller proportion of children to each, and the diminished mortality, point to an improved moral as well as physical condition of the population.†

But it will become still more evident how little connexion exists between illegitimacy and the desertion of children, if we compare the number of illegitimate children in different departments of France.

* Sur la Mortalité proportionnelle des Populations Normandes considérée comme mesure de leur aisance et de leur civilisation, (Tiré de la Bibl. Univ.) Genève, 1838. See especially the Notice Supplémentaire.

† See the researches of Sir F. d'Ivernois, Sur la Fécondité et la Mortalité proportionelles des Peuples considerées comme mesures de leur aisance et de leur civilisation. (Tiré de la Bibl. Univ. Août, 1835.) Genève, 1836. In this paper he points out the true interpretation of the above-mentioned facts, and explains what at first sounds so paradoxical.

Departments.	Date.	No. of Illeg. Births.	No. of Foundlings.
Bouches du Rhone .	1832	1219	825
Charente Inférieur .	1824	582	573
Corsica	1824	141	143
Cher	1827	391	411
,, ...	1828	354	377
Dordogne	1829	578	755
Ille et Villaine . . .	1832	312	466
The following table gives an opposite result:			
Jura	1826	588	68
,, ...	1828	452	58
Moselle	1824	720	78
Haut Rhin	1826	1221	34
,, ...	1832	980	78
Seine et Oise . . .	1826	822	30
Haute Saone	1824	1060	8
,, . . .	1829	1434	9
,, . . .	1831	841	3

The preceding tables are formed from the statements of MM. Terme and Monfalcon, p. 353; but the fact has not escaped the attention either of M. Remacle or of the Abbé Gaillard. The Baron de Gerando* likewise, in his valuable work on public charity, illustrates the same subject. It results from his investigations that in 4 only of those 12 departments in which foundlings are most numerous, do the illegitimate births exceed the average number. The converse also holds good, and 2 only of 12 in which the number of foundlings is smallest, present less than the average number of illegitimate births. The same fact will be seen to be still further elucidated by a comparison of the proportion of illegitimate births per 1000, in countries with and in those without hospitals for foundlings:

STATES WITHOUT HOSPICES.	Illegitimate Births.	STATES WITH HOSPICES.	Illegitimate Births.
Prussia	69 per 1000	France	71 per 1000
England and Wales . .	55 ,,	Naples	46 ,,
Wales alone . . .	83 ,,	Archduchy of Austria .	42 ,,
Saxony	121 ,,		
Hesse	149 ,,		

An investigation into the causes which render the proportion of illegitimate births so different in the several departments of France, or in those countries which figure in the above table would take us far beyond our limits. We do not infer from these facts that chastity is less valued in Protestant than in Catholic countries, but we seek simply to show that the want of chastity among women is not the cause of children being deserted, and that it is not to the existence of foundling hospitals that the increase of illegitimate births in any country is to be attributed. Public opinion regards the circumstance of an unmarried female becoming pregnant very differently in different countries. In some countries, as in the isle of Portland or in the neighbourhood of some of our collieries, a girl's pregnancy is merely a preliminary step to her marriage; while in other places such an occurrence would ruin her character and blight her prospects. Some persons too live in a state of

* De la Bienfaisance Publique, Paris, 1839, 8vo. Tome ii. p. 249.

concubinage simply because, owing to their distance from home, they are unable to procure those documents which, in France as well as in many German states, are indispensable to their marriage. This is a cause which tends to swell the number of illegitimate children in many of the large manufacturing towns of France, and has led to the establishment of charitable institutions, such as the society of Saint Regis at Paris, for facilitating the marriage of the poor.

It is our object, however, to enquire not into the causes of bastardy, but into those circumstances on which the exposure and desertion of children depend. It is commonly said that the immorality of a people is the cause of illegitimate births, but that misery leads them to desert their children. At first sight no truth could appear more self-evident than the latter clause of the above statement, for it is a well-known fact that the number of foundlings increases in seasons of famine or at times of unusual distress. In the year 1817, for instance,* the number of foundlings admitted into the hospices of Belgium rose from 3000 to 3945. In Paris the admissions of foundlings in that disastrous year increased by 800, and by 5000 throughout the whole of France. The same has been observed to take place during winters of unusual severity. The number of children admitted into the hospice at Paris during the three winter months of 1803, amounted to half the total admissions in that year, and the greatest number of children were exposed in the last of those three months, when the working classes had altogether exhausted their resources. But, though seasons of unusual distress may be attended with a sudden increase in the number of foundlings,† it does not necessarily follow that we can generalize that fact, and refer the desertion and exposure of children to the pressure of poverty on a people. M. Remacle, following M. Villeneuve, has given at p. 167 some very elaborate tables, displaying the proportion of foundlings to the population in comparison with the number of persons receiving public relief. On dividing France into three districts or zones, the suffering, the intermediate, and the prosperous, we obtain the following results:

	Suffering District.	Intermediate District.	Prosperous District.
Proportion of indigent to the population	1 to 15	1 to 23	1 to 37
,, foundlings ,,	1 to 345	1 to 488	1 to 601

M. de Gerando,‡ however, remarks with great truth that the number of recipients of public charity is by no means an accurate index of the amount of want in any particular district. If, for instance, we divide the whole of France into seven districts, it will be seen that the districts in which are the greatest number of paupers is that likewise in which the proportion per 1000 paying taxes is highest, and that the number of foundlings does not bear any fixed relation to either of these supposed signs of the well-being of a country.

* Quetelet et Smits, Recherches sur la Reproduction et la Mortalité de l'Homme. Bruxelles, 1832. 8vo, pp. 66.

† MM. Terme and Monfalcon show, p. 191, by the results afforded by the foundling hospital at Lyons in 1836, a year of extraordinary distress in that city, that times of unusual want are not invariably attended with an increase in the number of desertions of new-born infants; poverty has much more to do with the abandoning of children a few years old than with the desertion of new-born infants.

‡ Lib. cit. tom. ii. p. 253.

Districts.	Number of Indigent per 1000.	Proportion of Inhabitants per 1000 paying Taxes.	Number of Foundlings per 1000 Births.	Number of Foundlings per 1000 Natural Births.
North of France .	69	42	43	408
Ditto, exclusive of the department of the Seine . . .	70	42	25	355
East	37	38	24	326
Centre	38	29	34	584
South	42	32	35	628
West	48	26	29	600
Corsica . . .	21	18	28	645
The whole of France .	49	34	33	469

Besides, if poverty were the cause of the progressive increase in the number of foundlings, we must necessarily admit that the condition of the lower orders in France has continued to deteriorate during the past twenty-five years, while the contrary is, we believe, universally allowed to be true.

If then the increased number of foundlings cannot fairly be attributed either to a growing corruption of morals, or to the pressure of poverty, there remains no other explanation than that suggested by M. Quetelet's table which we have already quoted, namely, that it depends on the increase of the population. This fact, though so obvious, seems not to have been apprehended by any one before it was pointed out by MM. Terme and Monfalcon. They bring forward evidence for which we have not space, to prove that "the general law of increase in the desertions of new-born infants is the augmentation of the population. When the population becomes more considerable, the hospices receive a larger number of foundlings; when it diminishes the number of desertions immediately undergoes a perceptible reduction." (Terme and Monfalcon, p. 202.)

But the fact that the number of new-born infants deserted annually continues undiminished is of importance sufficient to claim the attention of a wise and enlightened government. All efforts to check the evil, however, must be fruitless so long as the system of secret admission into the hospices prevails. We shall have occasion to see many proofs of its injurious tendencies, but one of its worst results is shown in the large proportion of children born in wedlock who are sent to the hospice by their parents. Their number has been estimated by M. Remacle (p. 190) at 1 in 10 in Paris and most departments, and even as high as 1 in 5 in some cities. M. Gaillard observes (p. 143) that the proportion of 1 in 10 is very low, being only 1 in 270 legitimate children; a number the desertion of which may he thinks be fully accounted for by accidental causes, such as the destitution of the parents. He seems, however, to lose sight of the fact that a large proportion of these children are deposited in the *tour* without any certificate of their birth, and MM. Terme and Monfalcon (Nouvelles Considérations, p. 56,) estimate at 2400 the

number of legitimate children thus annually bastardised by their unnatural parents.

In the chamber of Deputies, and at the meetings of the Societè de la Morale chrétienne, M. de Lamartine has declaimed eloquently on the moral impossibility of a married woman deserting her child, and M. Gaillard assures us that it is an act of which none are guilty, but when impelled to it by extreme distress. MM. Terme and Monfalcon tell a different tale :

"In large manufacturing districts and among the artisans, the fathers and mothers separate themselves from their children with a most lamentable carelessness, and look on it as infinitely more convenient and desirable to take their children to a hospice and to forget them than to trouble themselves about bringing them up. M. Lelong, a member of the general counsel of Seine Inférieure, states that in some neighbourhoods the number of foundlings has equalled, and sometimes even exceeded the number of children born out of wedlock." (p. 197.)

Their own experience supplies them with the following striking fact, which will be found detailed at length in the Nouvelles Considérations, (p. xxviii.) : At the Hôtel Dieu of Lyons there is a lying-in ward for the wives of the artisans, in which from 500 to 600 are delivered annually. More than 60 of these women are detected every year by the vigilance of the police in the attempt to send their children to the hospice, and are compelled to take them back again. Many, however, elude the officers and succeed in getting rid of their children, so that it is not too high an estimate to calculate at 100 out of 500 the number of legitimate children bastardised or sought to be bastardised by their parents, while it is very seldom that the women who thus abandon their children are the poorest. Two thousand children are admitted every year into the hospice at Lyons: 800 of these are the children of women delivered in the hospice ; 200 are children above three days old, placed in the *tour*, and presumed to be legitimate ; 200 more are from one to ten years old, and are likewise supposed to be legitimate, and the remaining 800 are new-born infants deposited in the Tour, and consequently regarded as illegitimate. Of 1389 children restored to their parents at Lyons during eight years, either by direction of the municipal authorities, or at the parents' request, 424 or one third were legitimate. Many more facts of a similar kind might be adduced if we had space ; but enough, we think, has already been said to prove that the number of foundlings in France is swelled by many being at the charge of the state who in reality have no claim upon the public beneficence.

The French government is now fully alive to the evils which result from the want of all control over the admission of infants into the hospices ; and accordingly the reduction of the number of *tours* forms a main feature in the measures which have been recently introduced with the view of checking the desertion of children. It will appear in the sequel that very beneficial results have followed even from a very partial adoption of these plans ; but the arguments of those who oppose any alteration being made in the mode of admission into the hospice are of such a nature as to merit a careful investigation.

When the propositions of the government were first brought forward in the chamber of Deputies, they were met by such violent opposition, that a stranger might have imagined the employment of the Tours in

France, to have been at least coeval with St. Vincent de Paul, instead of which they were not generally adopted until 1811. By some strange misconception too, the system of secret admission has come to be regarded by many as an essential feature of foundling hospitals, and as such it has been attacked by some and defended by others. Others, indeed, to whom belong MM. Terme and Monfalcon, M. Remacle, and the Baron de Gerando, distinguish between opposition to the *Tour* and to the *Hospice*; they praise the latter, but use every argument against the former.

The advocates of the *tours* applaud them most for that profound mystery in which they involve every circumstance connected with the desertion of children. "Ingenious invention of Christian charity," says their most eloquent apologist, M. de Lamartine, "which has hands to receive, but neither eyes to see, nor tongue to tell." It screens the mother, say they, from harsh and unjust reproaches, and removes the grand inducement to infanticide by providing a place where her child and her shame may both be hidden. If a child were never abandoned except when misery or an overwhelming sense of shame impelled the mother to desert it, then indeed there might be an advantage in this impenetrable secrecy; but the facts we have already quoted from MM. Terme and Monfalcon prove the case to be far otherwise. M. de Gerando* furnishes us with data from which we may approach to a right estimate of the moral condition of the persons who people foundling hospitals. During the twenty years from 1816 to 1835, 57,400 women have been delivered in the Maternité at Paris, and $\frac{1}{20}$ of them sent their children to the Hospice des Enfans Trouvés. Of these women it is calculated that about a quarter were seduced by promise of marriage, and that they might be reclaimed to a virtuous course of life; another quarter had already begun a vicious life, but possibly might be reclaimed; and the remaining half consisted of women more or less depraved, but with regard to whom all attempts at reformation may be regarded as useless.

It has been asserted that the *tours*, by removing the temptation to infanticide, prevent the commission of that crime; but this statement is utterly erroneous. We have already shown that uo connexion exists between the proportion of illegitimate births and the desertion of children; and it is not less demonstrable that infanticide and the desertion of children depend on causes altogether different. If the statements of those who advocate the system of secret admissions were correct, the number of *tours* in a department and the number of infanticides would be in directly opposite proportions to each other; while infanticides should prevail most in countries where foundling hospitals are unknown. Now M. Remacle gives a table (p. 215), of which the following are the results:

No. of Departments.	No. of Inhabitants.	No. of Foundlings.	Proportion of Foundlings to Inhabitants.	No. of Tours.	No. of Infanticides in 4 years.
10	3,114,978	19,702	1 to 157	30	26
10	3,916,093	3307	1 to 1183	34	29

* Op. cit. tome ii. pp. 257-61. The statements there given with reference to the occupations, &c. of these persons well deserve attention.

If we compare different countries with each other, as the following table, (Remacle, p. 226,) enables us to do we shall find a greater proportion of infanticides in those countries where *tours* exist.

COUNTRIES WHICH HAVE TOURS.			COUNTRIES WITHOUT TOURS.		
		Inhabitants.			Inhabitants.
France . . .	1 in	326,530	England . .	1 in	855,903
Belgium (Brabant, etc.)	1 in	439,768	Belgium (Liege, etc.)	1 in	546,648
Ireland . .	1 in	287,566	Grand Duchy of Baden	1 in	228,020
			Prussia* . .	1 in	76,873
Average . .	1 in	351,321	Average . .	1 in	426,861
			Average (exclusive of Prussia) . .	1 in	543,524

A still stronger proof of the truth of this assertion is afforded by the fact that the suppression of the *tour* in many provinces of Belgium has not been followed by any increase in the commission of infanticide. So far indeed was this from being the case that the closure of the *tour* in Maestricht was immediately followed by a diminution in the number of infanticides within the district. Of this result, which at first sight may appear so extraordinary, the following is, we doubt not, the correct explanation:

"I had long," says M. Schaetzen, in his official report to the Belgian Council of State on March 10, 1834, "entertained the idea that foundling hospitals had a necessary tendency to preserve the lives of new-born infants. I endeavoured therefore to explain this occurrence (the diminution of infanticides after the Tour at Maestricht had been closed), and to ascertain the reasons why infanticides had not increased in the province of Limburg in inverse proportion to the number of infants deposited in the foundling hospital, and my researches have led me to a solution of the problem. I discovered that the crime of infanticide was not committed on children who had lived a few days; that as soon as any woman had experienced the pleasures of being a mother, she no longer thought of attempting the life of her child; that this barbarous act was committed only during the first moments of the woman's embarrassment, and while she was still struggling between the feeling of shame and of natural affection; and lastly, that the life of the child was safe whenever the mother was sure that the fact of her having been delivered was known to a second or third person."† (Remacle, p 233.)

M. Schaetzen's reasoning holds good with reference to all those cases of infanticide in the commission of which the sense of shame has any part. The crime, however, is perpetrated less frequently by young girls overwhelmed by the dread that their frailty will be exposed, than by women well schooled in vice, and who have long been dead to all feeling of shame. MM. Terme and Monfalcon assure us, "That those who are guilty of this crime are not young girls; but that two thirds of 336 per-

* There is reason to believe that some error exists with reference to the proportion of infanticides in Prussia; and M. Remacle expresses great doubts as to its correctness.

† The diminution of infanticides in Limburg must have been in a great measure owing to the temptation to a woman to conceal her pregnancy having been removed by the suppression of the *tour* at Maestricht.

sons accused of infanticide were women between twenty-five and thirty-five years of age; most of whom had not received any education, while many before committing infanticide had sunk to the lowest depths of depravity and infamy."—(Nouvelles Considérations, p. lxxvii.)

In some departments of France the experiment of suppressing the *tours* has been tried; and, as the friends of the measure say, with good success. This statement, however, has been contradicted by others, who point to statistical tables to show that since attempts have been made to do away with the plan of secret admissions, infanticide has grown much more frequent throughout France. From these documents* it appears, that during the three years previous to the introduction of the new measures, eighty-two cases of infanticide were annually sent for trial at the assizes, but that the average has been as high as 117 during the three years 1834, 1835, and 1836, subsequent to the change. This fact would seem to lead inevitably to the conclusion that any diminution in the number of foundlings has been purchased at the expense of the lives of very many infants.† There are however many sources of fallacy in the grounds on which this conclusion is founded. Had M. Smith, instead of confining his observations to the years of disturbance which followed the revolution, when the data afforded us are likely to be more or less incorrect, extended his researches some years back, as far for instance as 1826, he would have obtained an annual average of ninety-five infanticides instead of eighty-two. Much of this apparent increase too must be attributed to the greater activity of the police, and the more able administration of justice. During the four years preceding the suppression of the *tours*, the proportion of prisoners charged with infanticide who were sent to take their trial at the assizes, was to those discharged for want of evidence as 37 : 100; while during the four following years the number was as 43 : 100. The acquittal of those sent to trial have likewise fallen from 50 per cent. to 42 per cent. Moreover, in two-thirds of the departments of France, the frequency of infanticide is in direct proportion to the frequency of other crimes. The following table too, drawn up from materials contained in a paper by M. Bayard,‡ will show clearly that we must look to some cause far other than the feeling of shame, to account for whatever increase in the frequency of infanticide has actually taken place.

* Rapport sur les Enfans Trouvés, par M. Smith, 8vo, p. 30.

† In the Fifth Report of the British Association is a paper by Professor Maunsell on the Statistics of the Dublin Foundling Hospital. It is drawn up in such a way as to serve as an apology for the institution, since the suppression of which, Dr. Maunsell alleges that infanticide has greatly increased in frequency. Now, to say nothing of the exceedingly imperfect returns on which this statement is based, it should be observed that they do not go further back than the year 1829; while the system of secret admission was done away with, and the number of admissions was limited to 500 annually in 1822. Since that year, therefore, the supposed influence of the institution in checking infanticide must have ceased, and Dr. Maunsell's facts must consequently be regarded as altogether irrelevant to the question which he was desirous of elucidating.

‡ Considérations médico-légales sur plusieurs cas d'infanticide, et sur le fréquence de ce crime. Annales d'Hygiène, tom. xxiv. p. 331. It contains much valuable statistical information.

	During four years (1830-33), immediately before the Suppression of any *Tours*.	During four years (1834-37), immediately following the Suppression of some *Tours*.
Proportion of persons involved in 100 cases of infanticide . . .	109·3	112·4
Proportion of males to 100 females . . .	5·3	7·4
Proportion per cent. of the criminals . under . 25	34·9	35·9
Proportion per cent. of the criminals . from 25 to 35	42·1	38·7
Proportion per cent. of the criminals . from 35 to 45	17·3	16·6
Proportion per cent. of the criminals . above . 45	5·6	8·8

From this table it appears that the cases in which two persons are concerned in the commission of the crime have increased in frequency; that males are implicated in it oftener than formerly; and that the great increase has taken place among persons considerably advanced in life. These are circumstances which indicate a great deterioration of morals, but which likewise show that the habitually vicious are those who have principally contributed to make the crime of child-murder more frequent. As a further illustration of this fact, may be mentioned, (Remacle, p. 231,) that of 810 persons brought to trial for infanticide in the course of eight years, 169 were married, and 146 had children then living, and that nine men and eighty-two women were either living in concubinage or were the parents of bastard children at the time they committed the act. It is likewise worthy of remark, that 697 of these 810 could neither read nor write.

The preceding facts will, we think, make it appear very doubtful how far any increase of infanticide can be attributed to the suppression of the *tours*; but there exists still stronger evidence that such has not been the case.

"Twenty-four departments have suppressed forty-eight *tours* in less than two years, and in only nine of these has any increase in the number of infanticides occurred in the year 1835, while in thirteen they have become less frequent, and in the remaining two their number has continued unchanged. Thirteen departments have suppressed more than one *tour;* in five of these the number of infanticides has increased, and in seven has diminished. Eight departments did away entirely with their Tours, before January 1, 1834. Five of these have had fewer charges of infanticide than usual in the two following years; one only has presented any sensible increase; for the other two the results of the two years tally exactly with those of previous years.

Total increase . . . 5·8
Total decrease . . . 6·7

"The above are the results afforded by those departments which have suppressed their *tours*: fifty-four have preserved their number unchanged. Twenty-five of these have had fewer infanticides in 1835, in twenty-nine they have become more numerous. The total diminutions have amounted to 18·5; the total increase has been 40·3." (Remacle, p. 218.)

But the *tours* not only do not diminish the number of infanticides, but there is reason to believe that they are an indirect cause of the death of children; partly by affording a temptation to unmarried women to conceal their pregnancy, partly by inducing persons to desert their

children who would never think of so doing unless they were certain of their wickedness being concealed by a veil of impenetrable mystery. Nor is this all the evil which they occasion, but infants are brought from other countries to all the hospices near the frontier; and MM. Terme and Monfalcon, (Nouvelles Considérations, p. lxxii,) inform us, that a large proportion of the foundlings received into the hospice at Lyons are sent from Valais, from the canton of Fribourg, from Geneva, and from Savoy. There are persons who earn a livelihood by carrying children across the frontier and depositing them in the *tour* of some French hospice. For this, twenty francs used to be their charge, but competition has now reduced it to fifteen; and it is a well-ascertained fact that these messengers frequently lighten their labour by destroying the children whom they have undertaken to convey to a hospice.

The last argument against the suppression of the *tours* which we shall notice is, that where the measure has been adopted it has not led to any diminution in the number of foundlings. This assertion is based on a very small number of facts, to which quite as many of an opposite character might be opposed. The results, which have been recently obtained in Paris, prove, as will presently be seen, how much may be done by a wise administration to diminish the frequency of the desertion of children, and the following table of the number of foundlings in Geneva at different times, shows to how great an extent the evil may be either fostered or checked by the different plans pursued by the legislature.*

	Foundlings.	
	Annual mean.	Proportion per 1000 births.
During the whole of the French regime from 1799 to 1813	37	
From 1806 to 1812, a time when the foundling hospital on the French system was in full activity . . .	45	78
Since the restoration, from 1814 to 1823 . . .	9	17
„ from 1824 to 1833 . . .	$2\frac{8}{10}$	4

It has never been proposed to modify the present system suddenly, nor to do away with the Tours throughout France, without providing a substitute for them.† This substitute MM. Terme and Monfalcon and M. de Gerando think they have found in the system of open admission, *à bureau ouvert*. It is by no means a novel plan, but one which has been adopted in Paris for the last twenty years, and has worked so well that no difficulty is ever experienced in obtaining the address of any woman whose child is brought for admission, while though the *tour* has continued open, the number of children deposited in it scarcely exceeds one a month. It is proposed to multiply the number of depôts where foundlings may be received, and to render them much more numerous than the *tours* ever were. At any of these depôts a child will be received on

* Bibliothèque Universelle de Genève, t. x. p. 59.

† We purposely omit giving an account of the experiment of *Deplacement*, since it was not persevered in. It consisted in the removal of foundlings from their nurses in one department to others in a different department, or in a sort of periodical exchange of the children. It was adopted in order to check an abuse which had become very frequent, that of women sending their children to the *tour* of a hospice, and afterwards contriving to obtain charge of them again, as nurses paid by the institution. The above means at once produced a great reduction in the number of foundlings; but many circumstances concurred in rendering it so unpopular, that it was not thought advisable to continue it.

the name, address, &c. of its mother being stated, but none will be received unless this information is afforded; and a refusal to give it will be regarded as a proof of the unfitness of the applicant to partake of the benefits of the institution. No one but the mayor of the place will receive the application for admission; there will therefore be no compromise of any one's character; and if secrecy is strictly observed with reference to all persons who are admitted into the Maternité at Paris, there is no reason to fear that in this instance it will be violated. A stop will by these means be put to the importation of children from other countries, and that great abuse, the secret admission of legitimate children, by which it is computed that 2400 are annually bastardised, will be done away with.

It was likewise proposed to relieve poor women at their own homes, and thus to enable those to bring up their children who might otherwise be driven by poverty to abandon them.

Highly satisfactory results have been obtained at Paris by granting relief to mothers in order to prevent them from sending their children to the hospice, and by exacting a promise from all women received into the Maternité to suckle their infants while there, and to take them out on their departure from the institution. In the course of the first eight months after the adoption of these measures, the mothers of 458 children have been induced, by kind persuasions and by some pecuniary assistance, to retain their infants whom they had intended to abandon. One of the most gratifying features too in the working of this system is that the deaths among the infants whom their mothers were persuaded to keep charge of, amounted only to 1 in 14, while the mortality among the foundlings was 1 in 3. The following statement is given by the Baron de Gerando* of the working of these measures after they had been fourteen months in operation:

"The year 1838, when compared with the seven preceding years, has yielded the following results:

	Mean of the Seven former years.	The year 1838.
Children admitted	4929	3037
Died in the hospice	1306	763
Sent to the country	3651	2277
Claimed by their relations . . .	39	28

"During the course of the same year, 1838, although the *tour* has remained constantly open, the number of children deposited in it has not exceeded 60. The number of children exposed in the public thoroughfares during the course of the year was 28; and the number of children deserted in the entries of houses or in their interior was 11. The data collected in the Maternité during the seven years prior to 1838, compared with those of 1838, have given the following results:

		Mean of the Seven former years.	The year 1838.
Women	admitted . . .	2960	3153
	delivered . . .	2642	2946
Children of Women delivered in the Maternité .	still-born . . .	144	144
	died in the hospice .	72	119
	retained by their mothers . .	717	1437
	abandoned by their mothers in the hospital	1751	1297

* Op. cit. t. ii. p. 582, bis.

"Thus two fifths of those children who would probably have been abandoned to public charity, if the government had not taken steps for applying those regulations which are sanctioned by law, have by these measures been preserved to their mothers and families."

And this improvement, be it observed, has been accomplished even without closing the *tour*. It has not increased the number of infanticides, nor given rise to the desertion of more children in the public thoroughfares than in previous years, and it has been attended with a considerable saving in expense. For details concerning these points, however, we must once more refer to the valuable work of Baron Gerando.

It still remains for us to examine into one of the most important questions connected with foundling hospitals, namely, the high rate of mortality among their inmates. The mortality of early infancy varies greatly in different countries, being as low as 14·6 per 100 births in England and Wales for children under one year, and 21 per cent. for children under five years.* As a contrast to this we may mention some of the Eparchies of Russia, as Nischni Nowgorod, where 31 per cent. die during the first year: and according to Herrmann's researches the mortality during the first twelve months of existence averages 27 per cent. throughout the whole Russian empire.† We shall probably not underrate the mortality throughout Europe during the first year by estimating it at 21 per cent.; the average yielded by data furnished by Burdach‡ which refer to five different countries. But if with this we compare the mortality in foundling hospitals, we shall be forced to allow that they have signally failed in one great object of their institution, the preservation of the lives of infants.

The great mortality among foundlings is not observed merely in one country, nor is it owing to defective arrangements peculiar to some hospices, but is alike common to all. The proportion of deaths at Turin is estimated at 75 per cent. of the total admissions; at Moscow the admissions during ten years averaged 5255 annually, and the deaths 3471. During the ten years from 1822 to 1831, 39,114 children were received into the hospital at St. Petersburg, and 31,779 died,§ and MM. Terme and Monfalcon state that 377 died out of 417 who were admitted into the hospital at Archangel. At the close of the last century the mortality of foundlings during the first year,‖ was

At St. Petersburg . .	40 per cent.
Florence	40
Barcelona	60
Paris	80
Marseilles . . .	90
Dublin	91

In the year 1824, M. Chateauneuf¶ stated the mortality of foundlings

* Second Report of the Registrar-General, p. 10.

† Lichtenstädt, Ueber die Ursachen der grossen Sterblichkeit der Kinder. Petersburg, 1837, pp. 18-30.

‡ Physiologie. Band iii. Erste Tabelle.

§ Notice sur quelques uns des établissemens de Bienfaisance du nord de l'Allemagne, et de St. Petersburg, par M. Leuret, in Annales d'Hygiène, t. xx. p. 346.

‖ Considérations sur les Enfans Trouvés, par M. B. de Chateauneuf, Paris, 1824, 8vo, pp. 64.

¶ Lib. cit. Tableau ii.

throughout France during the first year, to be 57·6 per cent., and the statistical tables appended to the work of M. Remacle, show that after fourteen years it has not undergone any important diminution. We think, however, that M. Remacle is mistaken in supposing that during the past fifty years there has been an increase in this mortality. He asserts, on the authority of Raulin, that, in the year 1768, 75 per cent. of the foundlings at Grenoble were alive at the end of their seventh year; forgetting not only how little reliance can be placed upon statistical details before there was a regularly organized administration of foundling hospitals, but also that so low a rate of mortality as that just mentioned was never presented by the population of any country. It should too be borne in mind, when comparing the mortality of foundlings with that of the population generally, that in our estimate of the latter, we include the rich as well as the poor, and that a table of the mortality of the children of the poor during the first twelve months of their existence would bear a far higher proportion to the births than 21 per cent. It appears from a valuable paper by M. Villermé, "On the Mortality in the different quarters of Paris,"* that while the deaths of children under one year old form only 17 per cent. of the total deaths in the first arrondissement, which includes the most fashionable part of the city, the mortality among children of the same age in the twelfth, which is the poorest district, is so high as to form 25 per cent. of the total deaths, and 32 per cent. in the Rue Mouffetard, where the inhabitants are extremely poor. The influence of poverty too is still more strikingly exemplified by the fact, that in the Rue St. Honoré and Rue du Roule, which though situated in the twelfth arrondissement are not inhabited by poor persons, the mortality under one year is only 14 per cent. of the total deaths; and that the mortality from birth to the age of twelvemonths in the Rue Mouffetard is equal to that from birth to ten years in the Rue St. Honoré and Rue du Roule.

But, even though we were to compare the mortality of foundlings with that of children in the poorest parts of Paris, we should still find but little cause for satisfaction. MM. Terme and Monfalcon furnish us, p. 229, with tables of the mortality at different ages, of foundlings belonging to the hospice at Paris. It results from them that the mortality of foundlings, from birth to one year, is to the mortality in the nine subsequent years as 7·6: 13·7; or, in other words, that the mortality, from birth to one year, amounts to 66·8 per cent. of the total mortality from birth to ten years. It is well known to all persons who are at all familiar with statistical enquiries, that the rate of mortality during the first twelve months of existence, affords a very correct index to the general mortality of any people. We shall therefore confine our investigations into the causes of the mortality of foundlings to those which are in operation before they have completed their first year.

The first cause of mortality which we will mention is the transport of children from a distance, and their consequent exposure to the inclemency of the weather.

It is of course impossible to do more than guess at the distance which those children have been brought who are exposed in the *tours* of the French hospitals. Some means, however, appear to have existed by which

* Annales d'Hygiène, t. iii. p. 331.

it was ascertained in most instances how far children were brought to the Dublin Foundling Hospital. Mr. Wakefield gives a table in his work* on Ireland, from which it appears that 59 per cent. of all infants who had been brought a distance of more than 50 miles, died in the hospice, while the mortality among the other children did not exceed 48 per cent. The effects of this transport are much less sensible when the weather is warm than when the temperature is low. M. Gaillard has drawn up a table (p. 162,) showing the mortality of foundlings deposited in the *tour* of the hospice at Poitiers, as compared with that of infants who were merely removed thither from the Maternité. It appears that during the six warm months of the year, 7 per cent. of the former die to 6 per cent. of the latter; but that during the six winter months the mortality of the former rises to 19 per cent., of the latter only to 10 per cent. It is probable that but few of the foundlings deposited in the *tour* at Poitiers are the children of inhabitants of the town, but that most are brought from a distance; for in Lyons, the *tour* of which must be in a great degree supplied from the city itself, the mortality of children placed in it is only 1 in 23, while 1 foundling dies of every 8 born in the Maternité. Two causes concur to diminish the mortality of children deposited in the *tour*. First, that while children brought from the lying-in hospitals are always new born, those deposited in the *tour* are frequently two or three days old, or even older. Second, that the women who are delivered in the lying-in hospitals are usually poorer, and in all respects worse off than those who after being delivered by midwives send their infants to the *tour*, and that consequently their children are more liable to disease.

The second and most important source of the mortality of foundlings is to be found in the various substitutes for the mother's milk, with which it has been attempted to feed them. But, important as it is to provide for infants the food which nature has destined for them, almost all foundling hospitals are essentially deficient in this respect. The fearfully high mortality in the Dublin Foundling Hospital is in a great measure attributable to the want of proper arrangements for providing wet-nurses for the children. Mr. Wakefield† says that at the time when he wrote his work, one woman very often had to suckle two infants, sometimes even five. The result of this system is shown by a mortality of 37 per cent. of the admissions within a fortnight after the children entered the hospice, and the mortality within this period formed 72 per cent. of all the deaths which took place during the stay of the infants in the hospice.‡ MM. Terme

* An Account of Ireland, Statistical and Political, by Edward Wakefield. London, 1812, vol. ii. 4to, p. 429.

† Op. cit. vol. ii. chap. xxiv.

‡ We cannot omit noticing a statement of Professor Maunsell in his paper on the Dublin Foundling Hospital, to which we have already alluded. He says that of 51,523 children admitted between the years 1798 and 1831, 12,153 died immediately on admission, and therefore ought not to be reckoned as forming a part of the mortality of the institution. We will not follow him in his subsequent reasoning, by which he arrives at the startling conclusion that the proportion of foundlings who attain their ninth year is greater than that of other children. Immediately, however, is a very vague term, and may be applied either to days or hours. If to the latter this statement is directly contradicted by the observations of Mr. Wakefield, who even adduces tables to "prove the inaccuracy of Mr. Tooke's opinion, that the loss of lives in foundling hospitals is to be ascribed to the weak state of the infant previously to admission." See Wakefield's Ireland, vol. ii. p. 427.

and Monfalcon mention, (Nouvelles Considérations, p. lxx.) that in the hospital at Madrid, where the mortality is likewise extremely high, one woman frequently suckles three infants.

The great difficulties in the way of obtaining wet-nurses for the foundlings have formed the chief inducement to the frequent attempts which have been made to bring them up by hand. M. Gaillard shall relate the result of one experiment:

"At Parthenay, in the department of Deux-Sèvres, of 153 foundlings, 54 died between the ages of one day and twelve months, or 35 per cent., which is a higher proportion than that presented by Poitiers. At X———, of 244 newborn infants, 197, or 80 per cent. had died by the end of the first year. Struck by the enormous difference which existed between this number and those of Poitiers and Parthenay I determined to investigate its cause. I ascertained that, in this hospice, as much attention is paid to the children, and the nurses are under oversight as strict as at Poitiers and Parthenay. But at X———, none of the infants are suckled, but all are fed; and the reason assigned for so doing is, the fear of infecting the nurses with syphilis. Be this as it may, I have been assured by many persons connected with the management of the institution, that the fearful mortality just mentioned can be attributed to no other cause than the practice of not suckling the children. The officers of the institution have tried all means to remedy this evil, but neither their own efforts nor those of some most excellent female assistants have been of the slightest service; and the only measure by which they could reduce the mortality was, the having recourse to suckling the children by wet-nurses." (Gaillard, p. 166.)

Great, however, as the advantages of the suckling are, they are in some degree counterbalanced by disadvantages which come into operation as soon as the child is dismissed to its nurse in the country. None but the poorest inhabitants of a district offer themselves as wet-nurses, while children who do not require suckling may often be placed with people tolerably well off, sometimes with such as are childless, and who eventually adopt them. M. A. Gendron* states that it is the poorest of all the communes in the arrondissement of Vendôme, that of Percheron, which furnishes the hospice with the greatest number of wet-nurses. Women who have undertaken to suckle a foundling not unfrequently suckle their own child likewise, thus yielding to both an insufficient nourishment; or some will feed the foundling whom they had engaged to suckle, and keep their own child at the breast instead. These are, doubtless, drawbacks from the advantages of attempting to bring up the foundlings at the breast, but they merely show how insufficient are the efforts even of the most active benevolence to do away with all the far-reaching effects of vice.

A paper by M. Villermé in a recent number of the Annales d'Hygiène† contains some elaborate tables illustrative of the influence of suckling and of artificial feeding upon the mortality of foundlings. His facts are derived from the three hospices at Lyons, Rheims, and Paris. In the first, all the children are brought up at the breast; in the second, they are all fed by hand; and in the third, they are usually, though not invariably, suckled by wet-nurses. In the two former hospices the stay of the children is usually limited to one or two days, and never exceeds a week; but they remain in the hospice at Paris for a much longer time.

* Note sur la Création d'un depôt des Enfans Trouvés de Paris, in Annales d'Hygiène, tome vi. p. 81.

† De la Mortalité des Enfans Trouvés, Annales d'Hyg. t. xix. p. 47.

	Lyons.	Paris.	Rheims.
Mortality under one year, per 100 admissions . .	33·7	50·3	63·9

The length of the infant's sojourn in the hospice exercises a very considerable influence on their mortality, for many very fatal diseases prevail endemically in those institutions. A third of the children admitted into the hospice at Paris* previous to the French revolution, fell victims to the *endurcissement du tissu cellulaire*, and the disease still continues to carry off great numbers annually. *Muguet* is another very fatal affection, and both it and the induration of the cellular tissue may be regarded as peculiar to foundling hospitals. Pneumonia and gastro-enteritis are likewise very fatal, and the former complicates almost every illness by which the infants are attacked, and greatly diminishes their chances of recovery. To all the above diseases infants are liable in direct proportion to the length of their stay in the hospice; while syphilis, the fear of which has frequently prevented their being placed out at nurse, appears not only to be rarely fatal, but also to occur comparatively seldom. The early reports of the Dublin Foundling Hospital attribute to this disease a very great share in the production of the high mortality, but on an inspection of the children being made in 1799 it was ascertained that only 1 in 29 was so affected.† A similar opinion prevailed in France, but at the time of the general inspection of foundlings in 1821,‡ it appeared that the number of children suffering from venereal affections did not exceed 1 in 17. The importance of making the stay of the foundlings in the hospice as short as possible is now fully appreciated; and M. Remacle (p. 278) mentions that when he visited the hospital at Lyons, its ample ward did not contain above twenty infants.

Even though the interior arrangement of a hospice were perfect, and the stay of the infants there as short as possible, still a new-born child is so frail a being that a thousand precautions are essential to the preservation of its life. The nature of the conveyance by which it is removed from the hospice to its nurse in the country might seem to be a trivial matter; yet to a want of due care in this respect, MM. Terme and Monfalcon attribute a considerable share in producing the mortality among the foundlings belonging to the hospice at Paris. At Lyons messengers are employed, who carry the infants, placed in a cradle and well protected from the weather, on their heads, and this mode of conveying the children is considered preferable to any other, from its exposing the children less to being shaken or injured. We mention this merely as a specimen of the unwearied care with which the conductors of the hospice at Lyons have laboured to attain those favorable results which we must next examine.

There are many other circumstances which peril the life of the foundlings, and it would be interesting if we had room sufficient to trace the steps by which benevolence has sought to combat them, but we must hasten to enquire what have been the fruits of so much care and of such

* Chateauneuf, Lib. cit. p. 80.
Wakefield, Op. cit. vol. ii. chap. xxiv.
‡ Chateauneuf, Op. cit. See the report at the commencement by MM. Duméril and Coquebert-Moubret, p. xix.

lavish expenditure of money. It is true that no marked diminution has yet taken place in the mortality of foundlings throughout France, but the great difference in the rate of that mortality in various departments of the country* would at once suggest that much might be done to reduce it. The attempt has been made in many places, and its first-fruits are just beginning to appear. Nowhere have more zealous or more able workmen engaged in this philanthropic task than at Lyons, and no other city presents such encouraging results. From 1802 to 1810 the total mortality of children under one year compared with the total number at the charge of the hospice, (see Terme and Monfalcon, p. 341 et seq.,) was 1 in 7·4; in the ten succeeding years 1 in 8·65. In 1821 the important improvements in the hospice at Lyons began; and from 1822 to 1831 the mortality, including the still-born children brought to the hospice, was only 1 in 11·3. Since 1831 all the improvements have been brought into full action; all children are brought up at the breast, and their stay in the hospice has been rendered as short as possible The mortality from 1831 to 1836 has amounted only to 1 in 12·39. Only 1 in 7, or if we exclude the still-born 1 in 15, die before being sent to nurse. In 1820, the mortality during the first year was 50 per cent., but it has since been progressively decreasing, until it now does not exceed 30 per cent. This improvement during the first year of life is observed to continue during the subsequent years; thus, in 1820, the mortality from birth to 12 years was 70 per cent., but had sunk in 1824 to 58·3 per cent., and the expiration of 12 years from 1831 will doubtless show a much greater diminution.

Very many questions connected with this subject remain unnoticed, though interesting alike to the philosopher and the philanthropist. But some conclusion may be drawn from the facts we have already laid before our readers. Foundling hospitals have been the subject of much censure; it has been denied that they have ever done good, and even that they are capable of being turned to good ends. Do they deserve to have such a sentence of condemnation recorded against them? We think not; they are an institution of a by-gone age and an expiring faith. Had they not been what they were they could not have been at all, and we doubt much whether society or morals would have gained by their absence. The motives to charity are changed since the day when the fraternities of the Holy Ghost and St. Lazarus were founded, and with the altered motives there has followed of necessity an altered mode of action. The foundling hospitals in France are undergoing the changes which the times call for, and these changes are being effected by men of great wisdom and benevolence. We think we have shown that their undertaking is by no means a hopeless one; that they have done great good, and are likely to bring about much more; and we would especially recommend the works we have been noticing to all who fancy that there are certain stereotyped forms, according to which charity must needs work, and who deem it impossible that mankind can ever be benefited except by the adoption of their theories and the employment of their remedies.

* Chateauneuf, Op. cit. p. 67.

Art. II.

1. *De Organische Gebreken der Urethra, beschreven door* D. J. A. Arntzenius, Med. et Chir. Doct.—*Utrecht*, 1840. 8vo, pp. 442. Met Platen xvi. Folio.

The Organic Diseases of the Urethra, described by Dr. J. A. Arntzenius, Doctor of Medicine and Surgery.—*Utrecht*, 1840. With 16 Plates in folio.

2. *A Treatise on Stricture of the Urethra, containing an account of Improved Methods of Treatment; with an Appendix on Dilatation by Fluid Pressure in the Treatment of Urinary Calculus and other Diseases.* By James Arnott, m.d., late Superintendent Surgeon in the Honorable East India Company's service. Second Edition.—*London*, 1840. 8vo, pp. 234.

3. *Practical Observations on the Pathology and Treatment of Stricture of the Urethra, with Cases.* By Robert Wade, Senior Surgeon to the Westminster General Dispensary.—*London*, 1841. 8vo, pp. 149.

4. *Observations sur les Rétrécissements de l'Urètre par cause traumatique.* Par J. Franc, Professeur agrégé à la faculté de Médecine de Montpelier, &c.—*Paris*, 1840. 8vo, pp. 210.

Observations on Contractions of the Urethra, consequent on wounds, and on their treatment. By J. Franc, Professor in the Medical School of Montpelier.—*Paris*, 1840.

5. *Practical Hints on the Treatment of Stricture of the Urethra.* By Bransby Cooper, f.r.s. (*Guy's Hospital Reports*, Vol. V. 1840.)

It is our intention, in the present article, to give some account of the present state of our knowledge respecting strictures of the urethra generally; and in doing so we shall arrange, in our own fashion, the materials supplied by the works before us under the different heads into which the subject naturally divides itself. At the end of the article we shall state our opinion of the character and merits of the respective works.

Anatomy and relations of the Urethra. Dr. Arnott prefaces his treatise with a general view of the anatomy and relations of the urethra. "The urethra arises from that part of the bladder which in the erect position of the body is the lowest, and may be considered a tubular prolongation of its inner coat." (p. 2.) This is true only to a certain extent, and at a certain period of life. The bladder is a moveable viscus, and its relation to the arch of the pubes, (to which its membranous portion only is fixed by the triangular ligament,) is constantly varying from the condition of the surrounding viscera, and from the influence of age. In the fœtus the bladder is placed almost entirely in the abdomen, and above the pubes, the pelvis not being, as yet, sufficiently developed to admit of its descent. The rectum at this period, distended with meconium, and filling the whole of the imperfectly formed pelvis is another obstacle to the descent of the bladder to the position it subsequently occupies. As the bones of the pelvis acquire with age an increase of size, and become more and more developed, so the bladder is found lower and lower in the pelvis, till, in old age, it is even in a moderately distended state almost totally concealed behind the bones of the pubis. These anatomical facts show that Dr. Arnott's description of the opening of the urethra into the

bladder can only relate to the earlier periods of life; in adult and old age, there is always a pouch of greater or less size formed behind the urethral opening into the bladder.

So well aware was the late M. Dupuytren of this situation of the bladder in infancy, and at the earlier periods of life, and also of the occupation of the pelvis by the rectum at this age, that he used to give the following directions as necessary to be observed in the performance of the lateral operation for lithotomy in young children: It results from this disposition, that if a knife is attempted to be plunged into the bladder, or drawn from it in a horizontal direction, the instrument will, in the first instance, pass between the bladder and the rectum, and penetrate the latter; and in the second, after having divided the neck of the bladder, and prostate, at this period very small, the instrument wounds the intestine longitudinally. From which it is easy to conclude that, in order to avoid the rectum in children on whom the operation for lithotomy is performed in the ordinary situation, it will be necessary to give to the knife a direction parallel to that of a line which, setting out from the umbilicus, shall terminate at the tuberosity of the ischium of the left side; and consequently, that the handle of the instrument must always be more depressed, and the point more raised than in the adult.

The causes of stricture of the urethra. These are of varied kinds, but inflammation affecting its mucous and submucous cellular coats is the chief agent in all. Mr. Wade enumerates as causes: 1st, protracted gonorrhœa; 2d, continued chronic urethral inflammation in persons possessing an irritable urethra; 3d, the continued discharge of unhealthy urine containing the lithates or phosphates in excess; 4th, calculi or other causes producing irritation and inflammation of the kidneys, ureters, or bladder, subsequently extending to the urethra; 5th, external or internal injuries, and tumours. To this last class of causes M. Franc's work is exclusively devoted; and we may add to those which Mr. Wade has enumerated the cicatrices consequent upon the healing of chancres situated in the urethra. We are not aware that this has hitherto been noticed, but we have in our own practice had occasion to witness two or three instances where a diminution in the caliber, and a total destruction of the elasticity of the urethra have originated from the healing of chancres situated in the urethra itself. Dr. Arnott believes that strictures are generally caused by *irritation* of the urethra, "produced either directly or by sympathy with some contiguous parts under disease." (p. 33.) He brings forward as examples the passage of pieces of gravel along the urethra, the unskilful passing of instruments, the presence of a stone in the bladder, affections of the rectum, &c.; but he thinks that gonorrhœa is a cause so much more common than any of the others, that it may be almost considered the sole one. Hunter, it is well known, believed that strictures were never produced by gonorrhœa. Many modern surgeons, as Abernethy, Sir E. Home, Desault, and others, believed and taught that strictures were generally produced by the employment of injections during the inflammatory stage of gonorrhœa. We have no hesitation in confidently declaring that we are much more likely to expose our patient to the chance of stricture by totally omitting the use of injections in gonorrhœa than by their judicious employ. The quicker a gonorrhœa is cured the less likely are we to have stricture follow it. Gonorrhœa is a disease

whose ill consequences are in a direct ratio with the period of its continuance. Cure it quickly if you can, but at the same time cure it completely. If a spot of chronic inflammation remain, however trivial it may appear in the commencement, it will slowly thicken, and destroy the elasticity of the urethra. These are the diseases which, in the language of Desruelles, "youth entails upon old age."

"In general, strictures of the urethra arise from an inflammation, the consequence of some irritation often syphilitic (i. e. gonorrhœal), of which the mucous membrane is the seat, and which is not resolved, but assumes a chronic form, and perhaps there is effused therein a plastic material which then not only gives rise to the various forms of strictures depending on the mucous membrane itself, but being at the same time effused in the subjacent tissue produces also the unnatural hardness. In cases in which this inflammation is limited to one point of the mucous membrane, this swells up, its connexion with the subjacent cellular tissue is loosened, it becomes wrinkled, and a fold is formed on its surface which is continually enlarged by the pressure of the urine, and constitutes the so-called *bridle;* the mucous membrane contracts throughout a certain extent of the length of the urethra, and forms the long stricture. The mucous membrane itself commonly remains in these cases smooth, and apparently healthy on its inner surface, and Sir C. Bell, amongst others, has, in our opinion, committed an error in comparing the formation of these strictures with that of false membranes on the pleura in cases of pleuritis. On mucous membranes this exudative inflammation and the formation of organized false membranes are by no means so common as on serous membranes. On the surface of the mucous membranes on other parts of the body, we see altogether different results produced by chronic and especially by catarrhal inflammation; they become villous and undergo various degenerations, which are chiefly the consequences of ulceration to which the mucous membranes are particularly prone, but growths are not commonly produced by means of newly-formed tissues. We believe also that the polypous vegetations or fleshy growths mentioned by many writers, must be ascribed to ulceration of the mucous membrane of the urethra, which may then give rise to a variety of growths and degenerations, and sometimes to perforation of the urethra. On the contrary, we should regard it as certain that the indurations which are so often observed in the neighbourhood of strictures, are by no means proper to the mucous membrane. In these cases the inflammation is imparted to the subjacent tissue, whose cells become filled with plastic substance which is organized around the mucous membranes of the urethra, and whose tissue thus loses its elasticity and often acquires a fibrous or even cartilaginous hardness. Thus there is produced at once a diminution of the diameter of the canal, and a decrease of its flexibility and aptness for extension, which hinder the discharge of the urine, erection, and ejaculation of the semen. In bridles therefore or band-shaped strictures, in long strictures by contraction of the mucous membrane, and in polypous or fleshy excrescences, the mucous membrane itself is the seat of the disease; in callous or cartilaginous induration, the change of structure lies rather in the subjacent tissues. How far ulceration of the mucous membrane is the cause or the effect of the stricture is a question not satisfactorily solved. We have almost always seen it behind the stricture, and have therefore regarded it as the consequence. And probably ulceration is often assumed when it does not exist, for the discharge of purulent matter, so common in strictures, is far from proving its presence. . . . . That abscesses and even ulcerations often occur in the neighbourhood of, and especially behind, strictures, and that the latter at last perforate the wall of the canal, and give rise to various irremediable consequences, does not admit of doubt; but it is another question whether these are not the result of the obstructed passage of the urine and of the inflammation which is kept up behind the already-formed stricture, and which gives rise to the muco-purulent secretion and the ulceration." (Arntzenius, pp. 146-50.)

The principal causes of traumatic stricture are, 1st, contusions with or without solutions of continuity of the urethra in the perineal or scrotal regions; 2dly, lesions, with or without solutions of continuity, of that part of the canal which forms part of the penis; 3dly, internal lacerations resulting from the careless introduction of catheters, &c. or effected by calculi, or their fragments passing from the bladder. The majority of traumatic strictures of the urethra are situated anterior to the subpubic ligament, but they are sometimes met with behind this. That part of the urethra most commonly affected is at the anterior part of the perineum, and the interval between the two sides of the scrotum.

The importance of strictures resulting from injuries of the urethra depends much upon the degree of injury which has given rise to them. These injuries may be contusions, lacerations, or loss of substance. In connexion with them also are to be considered the injuries to the neighbouring parts. *Contusion* may be followed by general swelling and temporary stricture, ceasing when the swelling disappears. Induration and consequent stricture may follow the inflammation which is produced by contusion simply. *Laceration* may occur without loss of substance. It is always accompanied by swelling, and is generally followed by fistulous openings. It is not unfrequently succeeded by induration and consequent stricture. *Loss of substance* may occur in any situation and in all degrees, the character of the stricture being much influenced thereby.

Mr. Wade classes strictures under the following heads: 1, The dilatable stricture; 2, the simple chronic stricture; 3, the impassable stricture; 4, the irritable; 5, the inflammatory; 6, the stricture with marked disposition to contraction; 7, the spasmodic; and 8, the stricture from external or internal injury. The nature of several of these varieties, however, appears to be the same, their difference being merely in degree. Thus most permanent strictures exhibit a marked disposition to contraction: we think the division of strictures into the permanent, the spasmodic, and the irritable, sufficient for all practical purposes; it is good inasmuch as it indicates a real difference in the nature of the stricture, and one which requires for each variety a distinct peculiarity in treatment. The following observation by this author is worthy of notice:

"Irritable strictures are usually observed either in persons whose digestive organs are in an unhealthy state, or in those whose general health has been impaired by residence in warm climates; or who have been accustomed to indulge in the pleasures of the table, by which a high degree of excitability of the nervous system has been produced. In the lower classes of society, the irritability is most commonly brought on by the use of ardent spirits. An irritable stricture, if under the influence of muscular action, is much disposed to spasm; and if in a situation where there are no muscles, the irritability caused by the pressure of the instrument is often sufficient to occasion such a distension of the vessels of the corpus spongiosum around the obstruction, and of the lining membrane at the seat of the disease, as frequently, for a short time, to obstruct entirely the passage of the urine." (Wade, p. 20.)

Amongst the authors before us there appears to exist a difference of opinion as to the mode in which the term spasmodic stricture should be applied. Dr. Arnott says, "spasmodic stricture depends entirely on excessive or spasmodic contraction of some of the urethral fibres, and exists no longer than that contraction continues." Of course this explanation

will not be admitted by those who deny the existence of muscular fibres around the urethra anterior to the bulb. We are more disposed to sanction the explanation given by Mr. Wade. The term spasmodic stricture, he says, "should be confined to an obstruction at the bulbous or membranous portions of the urethra from involuntary contractions of a muscle or muscles surrounding that canal."

"Spasmodic stricture must certainly be considered as very generally the result of inflammation at the membranous or bulbous portions of the urethra, causing so much irritation, especially when the urine passes over the inflamed surface, as to produce contraction of the surrounding muscles, so that their necessary relaxation on contraction of the detrusor is prevented. These inflammatory spasmodic strictures most frequently occur in persons who, when affected with gonorrhœa, indulge in some excess or other, especially in wine, spirit, or punch; the last the most injurious of all, from its admixture with acid: or they may arise from the sudden suppression of the gonorrhœal discharge from cold or other causes. In these cases, the gonorrhœal inflammation, rapidly extending to the bulbous and membranous portions of the urethra, often excites so much spasmodic action of the surrounding muscles as to cause complete retention of urine; or the same effect may arise from the sudden increase of preexisting inflammation in those parts. All permanent strictures at the bulbous or membranous portions of the urethra may be increased by spasmodic action brought on by the passage of instruments, injurious indulgence in vinous or spirituous liquors, or indeed any cause which may excite irritation and inflammation at the seat of obstruction." (Wade, p. 24.)

Treatment. The works before us advocate several modes of treatment; by simple dilatation, dilatation by fluid pressure, and by the bougie armed with potassa fusa or the nitrate of silver. Each of these methods of treatment is applicable in various cases, and we shall lay before the reader those circumstances in which each may find its advantageous employ.

The treatment by simple dilatation by means of bougies, is the oldest and most simple method of treating strictures of the urethra.

In speaking of the history of bougies, Dr. Arntzenius introduces an interesting fact lately published by Dr. N. C. Bussemaker, in Dr. Heije's "Wenken en Meeningen:"

"The introduction of instruments into the urethra in the treatment of its strictures," he says, "dates from the earliest periods of the Christian era, and an important passage has lately been made known, which was written by Heliodorus, who lived in the beginning of the second century, and which is to be found in the fiftieth book of the Collectanea Medicinalia of Oribasius, published by Angelo Maio. It leaves not the least doubt that the plan of dilatation, by means of bougies made of papyrus, lead, tin, or quills, was, even at that early period, in use." (Arntzenius, p. 68.) *

* The following is a translation of portions of the passage from Heliodorus, quoted by Dr. Cato Bussemaker. "The passage for the urine, in consequence of ulceration, closes up with flesh. It does not altogether close, but only at some part of it, where it either becomes narrow or is completely filled up by flesh. When this takes place the patient makes water with difficulty or only by drops." Then, he says, there may be complete retention of urine, and he describes a rough mode of cutting into the bladder and destroying the carnosities for its cure, and says that in order to keep open the urethra it should, "especially during the first days after the operation, be dilated by introducing a compressing instrument made of dried papyrus." For making these instruments, "the papyrus must be macerated for two or three days, then placed on a cylindrical tube and fixed tightly round it . . . . . it must then be left to dry as completely as possible, and

There can be little doubt that this is the earliest record of the employment of these instruments. Hippocrates indeed mentions the use of tin tubes in the treatment of fistulæ, but nowhere speaks of applying them to the diseases of the urethra; and it may be reasonably believed that the instruments, more or less resembling catheters which have been dug from the ruins of Pompeii, were also employed in the former class of affections.

In the same section, after treating at considerable length of the several kinds of bougies invented for different intentions, Dr. Arntzenius says that, for the purpose of exploring the urethra to determine the degree, the kind, and the extent of a stricture in it, he has found no instruments so good as some manufactured by Van Gesscher of Amsterdam.

"They consist of a strip of parchment rolled up so tightly that its layers adhere pretty firmly to one another, and which has at one end of it a knob or drop of glue made of boiled parchment. This knob contributes very much to the facility of introducing the instrument into a stricture; one can feel it slipping in; and then, by the heat of the urethra, it melts and the bougie unrolls of itself, while the melted glue is retained without injury to the urethra and does not possess the slightest degree of any irritating quality. Such instruments may be manufactured of very small size and yet possess sufficient strength; and their unrolling is rather advantageous than injurious in consequence of the slow dilatation to which the stricture is thus subjected." (p. 99.)

Their cheapness is mentioned by the author as an additional recommendation of these bougies, and this is not an unnecessary quality, since in general each can be used only once. Whether they deserve all the praise bestowed on them experience only can decide; to those who are disposed to try them we can give our evidence that the author does not seem one accustomed to speak rashly or to recommend unjustly, and that in general the bougies with knobbed extremities, so highly commended by Sir Charles Bell, are, of all, the most useful for the purpose of exploring the urethra, whateverM. Ricord may say to the contrary.

There are three modes in which the treatment of dilatation may be performed: the first, which is most commonly practised in this country, is that of gradual dilatation by bougies of various kinds, the size being slowly increased. The second is the forced dilatation of Mayer and Lallemand, to which we need not more particularly allude, its dangers being such that it is not likely to be practised by any prudent surgeon in this country. The third is the fluid dilatation of Arnott. Dr. Arntzenius gives the preference to the treatment by simple dilatation. He supposes two different conditions in which patients may present themselves for treatment; in the first, a bougie can be passed into the stricture; in the second the canal is apparently completely closed and there are urgent symptoms of retention of urine. (p. 358.)

then, while still fixed on the tube, having been bent into the form of the urethra, may be introduced into it. Around the penis there is to be placed a sponge wet with cold water," and with proper bandages, the patient is to be thus left till the third day. Then "water is to be injected into the urethra to cleanse the ulcer, and if necessary another *pressorium* instrument is to be introduced, so as to dilate the canal still more. . . . An anti-inflammatory plaster is now placed round the penis, and it is bandaged and raised up in the usual manner. But after the fourth day, instead of the tube, a tin or leaden instrument is introduced carrying a little shield (*parmulam*), so that cicatrization may be brought on at the same time that the passage is dilated." (Heije's Wenken en Meeningen. Deel i. bl. 37.)

In the former case, the first step is to introduce one of the parchment bougies already described into the bladder; or, in the few cases in which the stricture is so long that these are too soft or become too soft in their passage to go through it, then to introduce one made of firmer materials or a catheter. The smallest ivory bougies are rarely strong enough for this first purpose, but when the canal has been somewhat dilated they are particularly useful, and especially from the very slight irritation which they produce in even the most sensitive canals. An instrument having been once passed, one should subsequently be introduced daily for several days, and allowed to remain in for a quarter of an hour or more up to an hour, according to the pain it produces. For the first few days the size of the instrument must be very cautiously increased; but afterwards the increase may be made with less danger, and the periods of introduction be made gradually more distant, till the operation is not performed more than once in a month, and then with a full-sized instrument of either wax or softened ivory. The only objection to this mode of treatment is its slowness; but this the author holds is more than compensated by its safety and the security against a return of the disease, which it affords in a far greater measure than any rapid mode of temporary cure.

But there are cases in which this method cannot be followed, 1st. When the urethra is very irritable and sensitive. In these, antiphlogistics should precede the use of instruments, and then, at first, only the softest should be employed, and these should only be introduced down to the stricture and held there for some time before an attempt is made to pass one through. 2d. In long and indurated strictures the use of bougies will produce only a certain amount of benefit, and then neither dilatation nor mechanical irritation will clear away the narrowed part. In these the most useful means are bougies with their ends smeared with nitrate of silver or corrosive sublimate. 3d. In hard bridles close by the external orifice of the urethra, which obstinately resist the passage of a large bougie; and in these, almost exclusively, the author considers incision admissible. The operation may be performed with an ordinary probe-pointed bistoury, unless the bridle lie more than two inches from the orifice, and then some one of the numerous stiletted catheters must be employed.

In proposing the employment of dilatation by fluid pressure, Dr. Arnott passes in review the inconveniences and evils likely to arise from the use of the simple bougie. In noticing the rationale of the mode of cure effected by these instruments he contends, and we think with great reason, that the cure is seldom permanent. The first effect of the introduction of a bougie sufficiently large to pass through a permanent stricture is violent distension of the diseased part of the urethra, which, if the instrument can be left in the canal, gradually diminishes by dilatation or absorption taking place; so that at last the instrument remains in the canal without any distending action. "After this its longer continuance in the passage can be of little avail, but may prove hurtful by the irritation excited. In curing strictures by the bougie, it often happens, from the increased tendency to contract, that, in the intervals between the introduction, whatever is gained by one is nearly lost before the succeeding, and this interruption to the process of distension, with the irritation produced by the so frequent passing of an instrument, is sufficient to account

for the ordinary tediousness of the cure." To obviate, in some measure, the evils attendant on the use of bougies of a fixed size, surgeons have had recourse to the employment of instruments composed of substances which swell by heat and moisture, and thus become enlarged when suffered to remain for a certain time in the urethra; tents made of sponge, and bougies manufactured of catgut, leather, &c. &c., have been devised for this purpose. Dr. Arnott's fluid dilator was constructed with the same views, viz., the capability of being enlarged when passed into the strictured part of the urethra.

Dr. Arnott states that a dilator for the cure of strictures should be of little bulk, and of easy introduction, and should be made capable of assuming and retaining any shape and magnitude when in the urethra; it should also be capable of exerting a distending force to any degree, and always under control. Such are the properties and advantages assumed by Dr. Arnott for his fluid dilator. It consists of "a tube of oiled silk, lined with the thin gut of some small animal to make it air-tight, and attached to the extremity of a small canula, by which it is distended with air or water from a bag or syringe at the outer end, with a stop-cock or valve to keep the air or water in when received."

For the particular description of the whole apparatus, we refer the reader to Dr. Arnott's treatise.

"The only part of the preparation of the dilator requiring nicety of execution, is the attachment of the distensible tube to the conducting tube and wire, which must be at once very neat and very secure. The silk tube and lining gut should be tied on together, the artist taking care that the wire be kept exactly in the axis of the tube, or that the wrinkles or folds at the extremity be equal all round. The tyings may be made conical by notching the extremity of the silk, after two or three turns of the small strong waxed silk thread have been made round it, and by then continuing the thread completely over it. The tyings should then be smoothed by a coating of bougie wax, and if unvarnished silk has been used, the operation is completed by covering both the silk and the tyings with a bit of gut. The secure attachment of the distensible tube to the canula and wire is a matter of great importance; for, should the silk become detached in the canal beyond the stricture, it might happen that the combined action of the urethra and flow of urine would not be able to expel it, until the stricture were fully dilated; it behoves therefore the instrument maker and the surgeon, to be careful that there exist no such hazard." (pp. 227-8.)

The distance from the orifice of the urethra of the stricture to be dilated must be first measured by a soft wax bougie, passed through a canula, which being gently pressed against the anterior surface, and opening of the stricture gives, on being withdrawn, an exact representation of the diseased part. This bougie Ducamp called his "sonde exploratrice."

The dilator is now to be passed into the stricture, its presence within it may be known by the distance of the stricture from the orifice of the meatus, (previously measured by the soft bougie,) and the peculiar sensation experienced by the passage of the knobbed extremity of the central wire through the compacted and uneven portion of the urethra. Dr. Arnott sometimes introduces the dilator through a canula. As soon as the bag is sufficiently within the stricture, as much air is to be injected into it as the patient can easily bear; and during the time it remains in

the urethra, the future admission or escape of the air is regulated by the sensations of the patient; that is, if the feeling of distension abate, more air may be injected, but if it should increase into pain, a little of the air may be allowed to escape.

Dr. Arnott enters largely into the evils and inconveniences arising from the use of ordinary bougies, whether by forced or gradual dilatation; and contrasts them with the advantages held out by the fluid dilator, both to patient and to practitioner. We must confess that the argument appears to us in favour of Dr. Arnott, and we are only sorry that a more extended practical application of his remedy has not been made. This we apprehend, must arise from a fancied difficulty either in the preparation or employ of the instrument. Ducamp was eminently successful in the application of his dilator, and we cannot understand why the same application has not been made of the original invention in this country. There is one evil to which we are afraid the fluid dilator is liable, although this may be avoided by limiting the size of the dilator when fully distended, and being extremely careful in the application of the distending force. The accident to which we refer is rupture of the urethra; one case of it is even related by Dr. Arnott, in which the application of the principle was made by the patient himself, "who in 1834 employed the dilator invented by Dr. Arnott; from which considerable relief was obtained. In 1831 finding the disease had returned, and that the stricture had nearly closed up again, he attempted to use the dilator himself, and in doing so had the misfortune to burst the urethra, and thus break a passage into the rectum." We suppose in this case the stricture was in the membranous portion of the urethra, and we must say that in instances where, in this situation, stricture exists, and the elasticity of the walls of the urethra are destroyed, rupture of the urethra from the employment of the fluid dilator is not unlikely, without the greatest caution, to occur.

The next mode of treating strictures is by the application of armed bougies to the diseased portion of the urethra. Mr. Wade revives the practice of Mr. Whateley, namely, the use of bougies armed with potassa fusa. This practice, very successful in the hands of the latter surgeon, had fallen into disuse, but has been again employed, and apparently with success, by Mr. Wade. The cases in which the potassa fusa may be employed with hope of success are, according to Mr. Wade, hard fibro-cartilaginous strictures, impervious to instruments without the employment of injurious pressure; hard strictures of long standing, which, although admitting the passage of a small bougie, bleed freely on its introduction; irritable strictures; spasmodic strictures, not arising from acute inflammation of the urethra; and strictures which have a marked disposition to contraction. In order to observe the effect of the potassa fusa on strictures of the urethra, Mr. Wade applied it, in the same manner as in stricture, to hard spots upon the tongue, caused by slight thickening of its mucous and submucous tissues. "The part in immediate contact with the potash quickly changes to a deep brown, surrounded by a small circle, and a little bloody serum oozes out. For two or three days afterwards the surface has a whitish appearance, and, at the end of a week or less, usually looks quite healthy; no ulceration ensues."

Mr. Wade concludes that the caustic potash acts beneficially upon

strictures: first, by its dissolvent powers; secondly, by promoting absorption, and stimulating the congested vessels to contraction; thirdly, by relieving irritability and inflammation. Mr. Wade believes the potassa fusa to possess great superiority over the argenti nitras in opening a stricture. It does not occasion a slough, and hence the painful sensation produced by the urine passing over an ulcerated surface is avoided.

The following directions are given by Mr. Wade for the employment of this remedy:

"Before using the potash, a bougie should be passed down to the stricture, that its distance from the orifice of the urethra may be correctly ascertained. A small piece of potassa fusa should be inserted into a hole made in the point of a soft bougie; the eighth part of a grain is the smallest and a grain the largest quantity I am in the habit of using; but it will be rarely necessary to exceed the sixth of a grain. It will be well to make two notches on the bougie containing the potash; one marking the exact distance of the stricture; the other an inch beyond; as, very probably, on introducing the armed bougie, the first mark may be concealed within the urethra, from the penis being more stretched than when the measurement was taken. The bougie must be well moulded round the potassa fusa, so as to prevent the alkali from projecting; and it should be so placed, that it may be more applied to the upper than the lower part of the stricture for obvious reasons. Armed bougies should be well rounded at their points, to guard the urethra from the action of the potash before it reaches the stricture. In very bad cases it may be advisable occasionally to use the potassa fusa in the recumbent position, as it will then not only be best applied to the surface of the stricture, but be most likely to penetrate its texture, which, in old and hard obstructions, is very desirable. . . . To impervious strictures, from 3 to 4 are the sizes of the bougies I generally employ when using the potassa fusa; and to such as are pervious, they should be used of a size or two larger than the obstruction which the point of the instrument should penetrate. The armed bougie must be rapidly passed down to the stricture, and held against it with gentle but steadily continued pressure, for one, two, or three minutes, according to the nature of the obstruction, which if very irritable and readily bleeding, the shortest time, or even less, should be at first selected as the most prudent course." (pp. 44-5.)

In ordinary cases this remedy may be applied every second or third day. In irritable strictures it may be well to allow four days to elapse between the applications. All the irritation produced by one application must be allowed to subside before a second is resolved on. "The potassa fusa should be kept in a phial with a ground-glass stopper. It should not be broken till required for immediate use."

According to Dr. Arntzenius, in cases of strictures absolutely impervious, the practitioner has always four methods from which to choose, namely, the forcible catheterism of Dessault and Boyer, the forcible injections of Amussat, the puncture of the bladder, and the cutting into the urethra behind the stricture. Against the first, objections cannot, he holds, be too strongly stated; it is always a dangerous, often an unsuccessful, and sometimes a fatal proceeding, and the chances must always be that more harm will be done by it than good. The violent injection of warm water can be useful in very few cases, and even in the very rare instances for which (imagining them to be common occurrences,) the plan was originally invented, namely, those in which the strictured part is completely closed by a lump of mucus, the injection of water is not preferable to the introduction of a bougie, but commonly produces more

pain. The puncture of the bladder above the pubis is at once the easiest and the safest operation; its danger has been much exaggerated, and it is most probable that the deaths that have followed its adoption have resulted not from its effects, but from its not having been performed sufficiently early. The puncture through the rectum is preferable to it only in the few cases in which the bladder lies very deep and far back; and the puncture through the perineum should be adopted only when effusion of urine has already taken place. The last mode of operation, by cutting into the urethra behind the stricture, is peculiarly adapted to cases in which the retention depends on obstruction by foreign bodies in the canal, or in which the urethra is manifestly very much dilated behind the stricture; but in others, the uncertainty of finding that portion of the urethra which is to be cut into, and of finding it sufficiently healthy for the introduction of an instrument, form important objections to this method. (Arntzenius, pp. 378-83.)

The propriety of these conclusions is now proved, we believe, by the experience of the best surgeons. They are followed by equally judicious observations on the treatment of some of the consequences or accompaniments of strictures, such as gleet, effusion of urine, urinary abscess and fistula, false passages, &c. Some cases are related also to prove the advantage of endeavouring to restore the urethral canal in cases of complete or nearly complete closure, by cutting into the perineum and then either cutting into or removing the strictured portion, and passing an instrument so as to connect the healthy parts of the urethra before and behind it; in other words by forming a new canal by the side of the stricture.

In a former communication in the same publication, Mr. Cooper strongly urged the superiority of the gentle treatment of stricture over the practice too frequently adopted of attempting at once to force an instrument through the obstruction. In the present, he dwells more at length on the means to be employed, and the precautions to be taken when it is determined to attempt to alleviate the symptoms of the patient by the gentle application of instruments, and lays before the profession the results of his practice on this subject, both public and private. We give additional publicity to his views of treatment, not because they are novel or original, but because his practice, which we may equally claim as ours, is judicious; and because it gains additional weight by his authority:

"It must," says Mr. Cooper, "be continually borne in mind, that all danger is not obviated by the avoidance of force; for the gentle use of the instrument may produce equally bad effects if it be injudiciously handled. On first examining the stricture, either a silver catheter or a bougie may be used for the purpose of ascertaining its seat and condition. No. 6 is the best-sized instrument for this object; it is nearly of the size of the urethra, and is much less likely than a smaller one to get entangled in the lacunæ of the canal. When the instrument is first passed down to the stricture, gentle pressure should be exercised, and, if its passage be resisted, should be continued for a few minutes. If the obstruction be owing to muscular spasm, continued pressure of three or four minutes will be sufficient to overcome the contraction; if, after that time, however, the obstacle does not yield, its persistence evidently depends upon the density of an adventitious deposition. When, in such a case, no great pain is experienced by the degree of pressure hitherto employed, and no bleeding oc-

curs, force may be used to the full extent considered safe by the surgeons; but if this is still ineffectual, no further mechanical means should be had recourse to, (unless the bladder be much distended and the symptoms of retention urgent,) but leeches to the perineum and a purgative draught should be prescribed. It generally happens, in cases of no very long standing, that benefit is at once derived from this treatment; and I have frequently seen the patient recover after it had been adopted for three or four alternate days; but in cases of older date, great difficulty of micturition is often found to remain, in spite of it. To combat this symptom, the application of the bougie should be continued; as it is now ascertained that the difficulty of directing the instrument into the bladder depends upon the density of the stricture, and not upon muscular contraction. A new indication now therefore presents itself, namely, the removal of the adventitious matter; this is most readily effected by maintaining an equable degree of force on the surface of the stricture, which induces inflammation and softening down of the newly-formed substance. In the course of a few days suppuration will be found to have been set up; after which five or six repetitions of the application of the instrument will be sufficient to effect its passage through the obstruction; and thus will be performed a cure of stricture in what I may term its second stage.

"It is in this second stage that the precaution which I have alluded to above is necessary; for it is requisite to be as cautious with respect to the precise direction given to the instrument when thus gently applied, as when force is used to push the catheter or sound into the bladder; inasmuch as, without proper attention to the direction of the instrument, a false passage is as likely to be produced in the one case as in the other. This I shall shortly be able to show by relating cases in point. If gentle pressure be repeatedly made against the sides of the urethra, instead of upon the stricture itself, the mucous membrane naturally yields to the continued pressure of the instrument; and a new passage is gradually produced, which by violence is frequently effected at once. When an opening has thus been formed in the urethra, it is not a necessary consequence that any train of symptoms should at once point out the error which has been committed. On the contrary, from the comparative facility with which the instrument passes onwards towards the bladder, the surgeon fancies, at first, that he has overcome the true source of obstruction, and indeed frequently succeeds in reaching the bladder with his instrument, having pushed it again into the urethra or through the prostate gland: a flow of urine then ensues, which gives him reason to suppose that the cure is complete. On the other hand, however, the urine is sometimes extravasated, as soon as the false passage has been made; an abscess is formed in the perineum, and all the symptoms follow inseparable from such a state of things, requiring, at once, the laying open of the perineum and the evacuation of the extravasated urine; and leading to the abandonment of the gentle mode of treatment for the cutting through of the permanent stricture." (Guy's Reports.)

A case is detailed by Mr. Cooper in illustration of the possibility of the occurrence of false passages even after the most gentle usage of an instrument. A gentleman, æt. 63, had been strictured for thirty years; when necessary he used bougies himself; but sometimes was so well, as not to have any occasion for them. Six or eight weeks before Mr. Cooper saw him, he discovered, after one of his aggravations, great pain and tumefaction in the perineum, which ended in extravasation of urine, and extensive sloughing of the perineum and scrotum, although all the time he made water as usual by the urethra. After deep incisions, the sloughs were cast off and the wound granulated, and at the time of making the report, he was in a fair way of getting well.

When a lengthened false passage has been made, and when no extravasation of urine has followed, it becomes difficult to ascertain that the

false passage exists. False passages of the lower region are generally the result of the forcible use of instruments in or near the bulb; while those of the upper part are a consequence of the continued pressure made upon the obstruction, with the penis drawn forwards to fix the point of opposition. Sometimes the point of the instrument, after passing along the outside of the stricture, reenters the canal, and is thereby conducted into the bladder. Such an occurrence may be suspected when difficulty of passing urine returns when not relieved by the catheter, as the new canal is incapable of remaining many days pervious, unless a mucous lining membrane is formed within it; to produce which a considerable length of time is necessary. A case of this kind occurred to Mr. Cooper, in which, after having passed the instrument for weeks, in the belief that he had reestablished the natural canal, it at length, on a sudden, took a new course into the bladder, and this proved to be through the natural urethra. Mr. Cooper supposes that the temporary false passage, by diverting the urine from the back of the stricture, relieved that part from irritation, and permitted it thereby to yield and become easily permeable to the instrument. The patient was not the worse for the accident, nor was there any difficulty after in getting the instrument into the bladder through the natural canal.

Mr. Cooper recommends the caustic bougie; first, in cases which resist the application of the common bougie or catheter; and secondly, in irritable strictures. With regard to the former class, it is questionable whether everyday experience of such treatment will justify the following broad statement, namely, "that a successful result generally follows the application of this instrument." Caustic is, no doubt, in experienced hands sometimes a valuable remedy; but we cannot go along with Mr. Cooper in urging it too strongly as one for common use. If, as Mr. Cooper states, false passages are so frequently caused by unarmed instruments "as be present in most of those cases where difficulty of passage continues whilst the patient is under treatment, and that post-mortem examinations show them to be extremely common," surely armed caustic bougies, which are calculated both to produce and aggravate false passages in a tenfold greater degree in the hands of the inexperienced, should be kept far in the background. We are not yet sufficiently forgetful of the caustic mania that followed the publication of Sir E. Home's works on this subject, to lend our sanction to any fresh eulogium on the remedy calculated at all to revive indiscriminately its use. Respecting the second class to which Mr. Cooper recommends caustic bougies, viz. irritable strictures, such are admitted on all hands to be fit subjects for its use. Sir Everard Home was among the first to suggest and recommend this practice, and perhaps the sum of the remedial improvements affected on this head by this gentleman may be centered in this one point.

Traumatic Strictures. Under this head we shall confine ourselves exclusively to the exposition of the views of Professor Franc, as detailed in the small work before us. The principal causes of this form of strictures are: 1, contusions with or without solution of continuity of the urethra in the perineal or scrotal regions; 2, lesions with or without solutions of continuity of that part of the canal which forms part of the penis; 3, internal lacerations, resulting from the careless introduction of catheters, or effected by calculi or by fragments of stone passing from the bladder.

The majority of traumatic strictures of the urethra are situated anterior to the subpubic ligament, but they are sometimes met with behind this. The part of the canal of the urethra most frequently affected is that at the anterior part of the perineum and the interval between the two sides of the scrotum. The importance of strictures resulting from injuries of the urethra depends much upon the degree of the injury which has given rise to them. These injuries may be, 1, contusion; 2, laceration; 3, loss of substance. In connexion with them also are injuries of the neighbouring parts. *Contusion* may be followed by general swelling and temporary stricture, ceasing when the swelling disappears. Induration and consequent stricture may follow the inflammation which is produced by contusion simply. *Laceration* may occur without loss of substance. It is always accompanied by swelling, and is generally followed by fistulous openings. It is not unfrequently succeeded by indurations and consequent stricture. When the laceration is from within, it is not necessarily accompanied with tumefactions. *Loss of substance* may occur in any situation and in all degrees, the character of the stricture being much influenced thereby.

Diagnosis. If after injury, retention of urine comes on without hemorrhage, *contusion* alone exists. If, in this case, retention is incomplete, and if during the excretion of the urine the patient feels no cutting pain where the urethra was injured, this further confirms the fact that there is neither laceration nor loss of substance. *Laceration* is characterized by hemorrhage from the urethra and pain on contact of urine. *Loss of substance* is marked by these last two symptoms, and by the formation and separation of eschars of various sizes. The cicatrices which result from the loss of substance may obliterate the canal in various degrees, and like other cicatrices they are disposed to contract. The age of the cicatrix is an important circumstance to consider in the question of the curability of stricture depending on it; the greater the age the greater the difficulty of cure.

Treatment. Dilatation, either continuous or intermittent, is the first means. It rarely happens that the employment of bougies is not necessary, whatever may be the degree of injury received by the canal; for in almost every instance there is at least a chronic state of engorgement of this part; and the rule of allowing the cicatrix, in cases of stricture with loss of substance, to form around a large sound is one of great importance. If this rule be neglected, the canal may be almost entirely obliterated, and if the loss of substance has affected the whole circumference of the canal, the obliteration may be complete. But if from the beginning of the treatment, when the reparatory process has but commenced, the sound be made use of, the cicatrix acquires a large superficial extent. This cicatrix in the course of time becomes lined by a new mucous membrane, in the place of that which was destroyed; that is to say, by a very thin membrane of a whitish colour secreting a mucous fluid, but destitute of follicles, glands, or villosities. The mode of conducting the dilatation must be gradual; the sound having been allowed to remain for twenty-four hours in the canal, it should be replaced either by another of a larger or of the same size. It is useless to employ the same instrument during a longer period than twenty-four hours; and the change is beneficial both

by preventing its alteration by the urine and by altering the situation of its point in the bladder.

Cauterization may be employed wherever the object is to destroy a cicatrix which stretches across the canal, or a thick, old, hard cicatrix. But it is not alone sufficient to destroy the obstacle by means of caustic; it is necessary afterwards to employ dilatation, to oppose the disposition of the new cicatrix to contract, and to continue the employment of bougies until it is fair to conclude that a new mucous membrane is formed.

It is an important circumstance stated by the author (and if true of great practical application), that the cicatrices which result from wounds treated by repeated cauterization with nitrate of silver are much less retractile than others. Cauterization may also be employed where there exists a fixed pain in one part of the canal, which dilatation has not been able to modify. Cauterization will be more likely to succeed, if from the discharge of any purulent matter or other symptom the pain may be referrible to a chronic inflammation of the mucous membrane. Different circumstances will require a difference in the mode of cauterizing; thus it will be necessary to continue the cauterization longer when the object is to destroy a cicatrix which stretches across the urethra, or which is thick, hard, and old, than when it is used to repress fleshy vegetations, to resolve by means of an acute inflammation an induration of the submucous cellular tissue, or to put an end to a fixed pain which depends on chronic inflammation. In every case *lateral* cauterization must be avoided except when the canal is sufficiently large to prevent the occurrence of retention afterwards. When the contraction is too great, dilatation by bougies must always precede the use of caustic. The author appears to have had little experience in the use of scarifications and incisions, though he admits them to be occasionally necessary, nor has he anything important to say on the subject of the application of plastic surgery to deficiencies in the urethra.

According to our promise at the beginning of this article, we shall now conclude with a few brief remarks on the character of the individual works which have furnished the chief materials for its construction.

I. The Treatise of Dr. Arntzenius obtained the gold medal offered by the Society of Arts and Sciences at Utrecht for the best essay "On the diagnosis, nature, causes, consequences, and treatment of the various organic diseases of the urethra, including a critical examination of the several methods proposed for their cure, based, as far as possible, on original observations;" and there is every evidence that the prize was well awarded; for the work before us is by far more complete than any we have ever met with on the subject, and will amply supply the defect of knowledge which, the author says, has long existed in Holland respecting the diseases of the urinary passages. The whole subject is treated in the fullest and most orderly manner; the works of almost every author upon it in this country, as well as in France, Germany, and Holland, have been studied and analysed, and their most important contents are combined with the author's own observations with such rare judgment, that all appearance of the work being, as it really is in great measure, a laborious compilation, is lost. The plates are beautifully lithographed, and the paper and printing (if we may be allowed to speak of the least impor-

tant things,) are such as English publishers might imitate, and are very far superior to those of any French or German work of the same character.

II. In our last Number we noticed at some length Dr. James Arnott's just claims to the discovery detailed in the work before us which was so shamefully pirated by M. Ducamp. It is, the author states, the principal object of the republication of his book, to claim priority with respect to this discovery; but, as will be seen from the notice we have taken of it, its merits are far from being confined to this. In addition to the elucidation of his own peculiar process, it contains an account of the modes practised by other surgeons in the treatment of impassable and other forms of stricture. The application of dilatation by fluid pressure to other diseases besides stricture is also considered. The author recommends its application in stricture of the rectum, enlargement of the prostate, in urinary calculi, more particularly in the female, and in obstetric surgery where it may be used to dilate the soft parts more safely than the hand. Dr. Arnott's work is a valuable surgical monograph; we are only at a loss to conceive why the plan so strongly recommended is not more universally employed.

III. Mr. Wade's book gives a short description of stricture in its various forms and stages, with their appropriate treatment. Its principal object is to hold up to our confidence the powers of the potassa fusa, whose merits appear to have been forgotten since the days of Mr. Whateley.

Although a very creditable monograph, Mr. Wade's book contains little that is new; and we think the powers of the potassa fusa might have been as well set forth in a short paper in some journal as in a volume of a hundred and forty-nine pages.

IV. M. Franc's little volume contains some valuable information on a very important subject. It is divided into two parts, the first giving a detail of cases illustrative of the observations contained in the second: it has the merit, so rare in French books, of being both small in extent and concise in style.

V. Of the general character of Mr. Cooper's papers we have already spoken: we will only here add that they are valuable contributions to surgery, and deserve the especial notice of the young surgeon.

Art. III.

Die Specielle Pathologie und Therapie vom Klinischen Standpuncte ausbearbeitet. Von Dr. Carl Canstatt, Königlich-bayerischem Gerichtsarzt, und Mitgliede meherer gelehrter Gesellschaften. Erster Band.—*Erlangen*, 1841. 8vo, pp. 331.

Special Pathology and Therapeutics, founded on Clinical Observation. By Dr. Charles Canstatt. First Vol.—*Erlangen*, 1841.

It is not our intention to give a systematic and complete analysis of the volume before us, worthy though it be of a somewhat detailed examination. We shall confine our remarks to such only of its contents as seem most likely to interest the English reader.

In his preface, Dr. Canstatt remarks that clinical research may be prosecuted on one of two methods, the *Morphological* and the *Genetic* or

Historical. The one is founded on the particular form (μορφή) or appearance under which disease manifests itself; the other on a consideration of the causes and morbid processes of which that disease is the result. "The latter method," he observes, "just awakening from the long lethargy into which the exclusive pursuit of pathological anatomy had laid it, is, notwithstanding its high importance, as yet but in its infancy." Further on, the author refers to the rapid progress which neuro-physiology is making, and must ever make in comparison of its "sister science," neuro-pathology; to the former of which, the latter must be content to act the part of a mere handmaid.

There is, doubtless, truth in these remarks. If we enquire to what extent practice has been advanced by pathological anatomy, we shall find it to be less than what might at first be expected. In other words, the superiority, as regards treatment, of physicians of the present time over their predecessors of earlier ages is relatively less than the superiority of the former in pathological acquirement is great. For example, our minuter, and, if we may be allowed the expression, our microscopic acquaintance with the phenomena of inflammation has immaterially, if at all, influenced the treatment of that disease; and the same may be said of fever and several other principal maladies. The information, moreover, which pathological anatomy can convey is often far from final. Thus, the phthisical disorganization of the lungs is not, properly speaking, the cause of death; it is rather the impediment to the performance of the function of respiration, and its various consequences produced by the disorganization referred to, which bring about the fatal result. Now, on lesions such as this, pathological anatomy throws little or no light. It is to be added, that towards the elucidation of the nature of many diseases, morbid dissection has already done all that it can be expected ever to do: so that a great number of the elaborate *post-mortem* examinations, and subsequent verbose reports and comments with which the pages of medical journals are often needlessly loaded—consisting as they do of things a thousand times observed, and as often described—are rather for the advantage of the individuals who undertake them than for that of the public or the profession. We are led to these remarks from no wish, the most remote, to disparage pathological anatomy or underrate its just claims, but partly because the observation of Dr. Canstatt naturally suggested them; partly because this branch of our art is still cultivated and written of by many, as if it were the end, not a mere means of helping us to a knowledge of the causes by which structural changes are produced. We even venture to lay it down as an axiom that just in proportion as we could arrive at a knowledge of disease, independently of pathological anatomy, that is, before the occurrence of those more palpable changes of which it is the province of pathological anatomy to make us cognizant, the nearer should we be to a knowledge of the essence of disease, and of those stages of it in which remedial measures are most likely to avail.

Then, as to the author's other remark, that neuro-physiology and physiology in every department must precede the respective pathologies, it scarcely requires the slightest illustration. It is obviously first necessary to ascertain what is the normal law, before we pretend to decide wherein aberrations from that law consist. Health, like social order, is the rule; disease, like anarchy, the exception: and consequently we must

first possess our minds with clear conceptions of what the primary and proper order and course of things are, before, in the event of these being interrupted, we can distinctly understand what is the desirable state of matters which it should be our aim to restore.

In the work before us, disease is treated of after the morphological method. The volume consists of twenty-two sections, relating to the following subjects: Atrophy; Hypertrophy; Plethora; Anemia; Chlorosis; Congestion; Hyperemia; Inflammation; Hemorrhagy; Anomalies of the Secretions; Dropsies; Pneumatoses; Obesity; Homœoplastic Formations; Pseudo-plastic Formations; Tuberculosis and Scrofulosis; Lithiasis; Malaria; Ossification (or hardening, in general, of tissues); Fever; Neuroses. Many of these subjects are subdivided, and a number of important diseases, not named in the above list, are treated of, as species of the genera now enumerated. In a second volume, Dr. Canstatt contemplates an exposition of Clinical Medicine on the Genetic or Historical plan; which is more applicable to diseases of the system (individualität), such as, the cachexies and dyschymoses; and also to cosmical diseases, or those dependent on soil, climate, or particular atmospheric constitution, as for example, endemics and epidemics. After disease has localized itself in some particular part or organ, and become overt or, as the author expresses it, formal, the other or morphological plan is to be adopted; although even then a study of the malady, on the genetic principle, is, in a therapeutical point of view, highly useful, in order that we may ascertain the causal indication, ever most important for the right apprehension and radical treatment of disease.

Hypertrophy. In the section on hypertrophy (p. 3,) Dr. Canstatt observes, "all organs and tissues consist merely of vessel, blood, and nerve, and formative matter. The blood is the fluid material; the formative matter is the condensed and condensing plasma in the tissue which is forming. . . . The product of the nutrient process is in the concrete tissue, neither blood, nor vessel, nor nerve, but the condensed and condensing plasma." This peculiar and somewhat oracular language, which, be it remarked, is that of other German physiologists, would lead us to infer that the plasma is a substance distinct from the blood and intermediate between it and the already organized tissues, vessel, and nerve; that it is neither albumen nor fibrine, nor yet a compound of these; that the plasma is first constituted separately, and that then vessel, nerve, &c., derive from it their particular molecular conglomeration. Now this is a purely gratuitous supposition It removes no difficulty as to the manner of the vegetative process; since that the elective attraction of homogeneous matter, by the already organized tissues should take place from the plasma is just as mysterious as that it should take place from the blood directly; while the supposition of an intermediate, independent product, the plasma, seems only to render the process of organic formation more circuitous and perplexing. Indeed at page 6, Dr. Canstatt himself appears to adopt the more ordinary and simple view. "The elucidation," he says, "of the phenomena of nutrition is impossible, so long as we allow not to every organ, to every organic element, to every organo-crystallizable particle, specific powers of assimilation, whereby each of these can operate on the nutrient materials *contained in the blood;* can appropriate these to its own particular augmentation." There is no

mention here of the plasma; and it is singular that Dr. Canstatt should employ this term elsewhere, yet omit all reference to it in this, a circumstantial statement of the nutrient process. We believe that Müller's account of the mode of nutrition is the one generally received, and is, perhaps, as explicit and precise as the present state of our knowledge admits of. "Nutrition must be effected through the coats of the capillary vessels, and the process consists in the fluid parts of the blood permeating the parietes of the capillaries, while the solid particles are visibly carried onwards into the veins. The most important materials for nutrition are the albumen and fibrine dissolved in the liquor sanguinis." (Baly's Müller's Elements of Physiology, vol. i. p. 360.)

In discoursing of hypertrophy (p. 6), the author compares the eccentric attraction of the individual tissue or organ in which that morbid process is going on, to the conglomerative growth of a crystallizable salt in a salt-ley, by which the constituents of the saline mass which are in solution are led to deposit themselves on the nucleus. He supposes that in a similar manner, the organized tissue, the seat of an excessive trophical action, attracts from the "blood-stream" formative matter appropriate to it. It strikes us that the illustration, without really enlightening our conceptions of the vegetative process, is too mechanical in its character to be legitimately paralleled with that of animal nutrition. The author recognizes as one cause of hypertrophy, a remissness in the absorbent action of the part, which our readers are aware is doubted of by other physiologists; although, in our opinion, on no good grounds.

Dr. Canstatt's views of what may be expected from treatment in hypertrophy are, in the last degree, desponding. Hypertrophic action is, he conceives, so nearly connected with that of normal nutrition, that we cannot exert any influence on the former without debilitating the entire latter process; as, on the other hand, we cannot suffer physiological nutrition to go on uninterfered with, without encouraging the morbid action. "The cure by hunger," he observes drily, "may be resorted to in desperate cases." Valsalva's decisive and successful treatment on this plan, in cases of aneurism, which, in certain of its characters, and in the therapeutic means proper to it, somewhat resembles hypertrophy, will be in the recollection of our readers. It must at the same time be remembered, in regard to aneurism, that severe abstinence may accelerate it, by attenuating and debilitating the tissues, and lessening the resistance which they would otherwise oppose to the dilating force of the current of blood. Still, in cases of hypertrophy, we have no small faith in a judiciously employed system of abstinence: or to express ourselves more correctly, in a moderate reduction of the wonted amount of nutritive supply. We think that the author is in error in supposing, at least in all cases, that abstinence affects equally parts which are normally developed, and those that are morbidly so. This is not always, we may say, is not usually the case, so long as there is mere hypertrophy, not structural change or pseudo-plastic formation, and so long as the constitution is in any considerable degree sound. In such cases, abstinence affects, first and chiefly, the morbid growth. Nature gives up, in the first instance, that which is extraneous and parasitical, in preference to what is normal both in structure and in degree of development. This is an important law, observable in a thousand cases, without the auspicious

operation of which, indeed, one half of our therapeutic labours would be vain.

As an internal means, iodine is suggested; but then the author sceptically surmises that this is a means dangerous to be had recourse to, since the modus operandi of iodine consists in undermining the universal process of nutrition. It is not to be doubted that, in some measure, it does so; still the same reasoning is applicable to it as to abstinence, namely, that simple hypertrophied parts are taken down previously to normally developed organs being affected by it. No mention is made of antimonials, which, however, as well as nitre, are worthy of attention. Bloodletting, particularly when it can be brought to bear locally on the organ, which is the seat of hypertrophic action, may be useful; but even in regard to it, the author is far from sanguine, since if practised in moderation, it is apt to prove fruitless; if energetically employed, it is more likely to promote anemia, dropsy, and debility, than to cure the hypertrophy. He entertains the same opinion of purgatives. Attempts to arrest the hypertrophy of glandular organs, by augmenting their secretions may, in some cases, do good; but on the other hand, the excitement produced in the endeavour to stimulate the organ to more active secretion may but help to augment and accelerate the hypertrophy.

Dr. Canstatt considers powerful revulsives as among the most efficient modes of treatment; a seton, for example, in hypertrophy of the heart. As later means, tying of the principal blood-vessels, or section of the chief nerves of the part, or extirpation in the case of organs that may be spared, as the thyroid and mammary glands, the testicles, &c. may be resorted to. He justly regards the causal indication as most important, where it can be ascertained. It is singular that the author should omit all reference to sedatives as very powerful indirect means of checking that species of hypertrophy dependent on excess of innervation, and consequently of increased and sthenic action. We have noticed unequivocal benefit from the prolonged use of hyoscyamus, hydrocyanic acid, opium, and other sedatives in cases of hypertrophy of the heart, other means being conjointly employed.

We pass over the section on Atrophy. Many or most of the causes of atrophy are suggested by those of hypertrophy. Thus atrophic and hypertrophic affections dependent on the antagonism or sympathy of related organs, mutually produce each other. Wasting of one kidney gives rise to increased action, to hypertrophy of the other; and, *vice versâ*, converse results ensue. Plethora we also omit; a lesion which, Dr. Canstatt observes, is to the fluid what hypertrophy is to the solid constituents of the body. We may remark that, according to the author, hypertrophy always begins in the plasma; and consists in this substance augmenting itself in morbid disproportion to the vascular and nervous tissues of the part; and that therein lies the distinction between pathological and physiological nutrition. In like manner, plethora is not the result of a simultaneous increase of all the elements of the blood, but of some one of them. There may consequently be cacho-chymious, lymphatic, venous, adipose, serous, and plastic plethora.

Anemia. The nature and appearances, the causes, course, and cure of anemia, or, as Dr. Canstatt more properly designates it, oligemia, next occupy attention. This is a disease in which, according to the author, medical art is more efficient than in most others, and "reaps," to use

his phrase, "the most beautiful triumphs." (p. 31.) The remark may be true in regard to oligemia resulting from *some* of the causes enumerated by the author, those, namely, dependent on "an unusually increased consumption of the blood;" as by inordinate purgation, bloodletting, lactation, salivation, purulent discharges, diarrhœa, sensual excesses, pregnancy. But the same thing cannot be alleged of anemia caused by others of the derangements referred to by him, such as diseases of the spleen, lungs, heart, mesenteric glands—the cure of which forms of the affection, depending of necessity on the prior removal of the above formidable maladies, must either be altogether beyond the reach of art, or else require very protracted treatment.

Chlorosis, Dr. Canstatt regards as "a spasmodic form of oligemia," (p. 32;) and as his opinions of the nature of this disease, and of the treatment which it demands, tend to simplification by showing chlorosis to be altogether identical with anemia, we shall briefly notice them. "We have to choose," he observes, "whether to range chlorosis among the dyscrasiæ, or to treat of it in this place and in connexion with anemia. We prefer the latter, since, in fact, anemia and chlorosis, in their symptoms, course, issue, causes, indications of cure, are so entirely identical as to be, in our apprehension, in the strictest sense, one and the same disease. Anemia (or hydremia, oligemia, blood deficient in crasis, however one may choose to designate it,) suffices to explain all the conjoint symptoms of chlorosis, its acrinie (absence of secretion) of the genital organs, its derangement of the digestive function, its nervous affections." (p. 33.)

An asthenic condition of the nervous system is an affection always coincident with the anemia; since, on the one hand, a normal condition of that system is indispensable to a right formation of blood; as, on the other, normal blood is essential to a healthy state of the nervous system. Chlorosis, he thinks, may originate in a faulty state of either of these systems, but in both cases its symptoms, course, and effects are the same. Chlorosis may show itself in lively and sanguineous virgins; and he explains this fact on supposition that the blood of every young woman undergoes, at puberty, certain marked changes, in order that it may be fitted for the manifestation of that peculiar "sensibility and irritability," which belong naturally to the adult female constitution. Rösch supposes that the change which takes place in the blood of girls at this period transmutes it from somewhat of a molluscous into a mammalious character. The blood, which hitherto abounds with albumen, becomes now replenished with fibrine. Dr. Canstatt believes that every young woman suffers more or less considerably from the operation of this change, and that hence, even florid girls may, for a time, exhibit the "qualitative dyscrasies" and other signs of chlorosis.

This disease, when of long duration and severely manifested, may lead to serious consequences, which vary according as the patient is of the phlegmatic or nervous temperament—conducting, in the former, to dropsies; in the latter, to consumption.

The cachectic complexion of the chlorotic patient often leads to a suspicion that she (or he, for young men are incontestably liable to the disease,) is the subject of icteric, hypochondriac, or carcinomatous affections. But the distinction may, with a little care, be easily drawn. In

chlorosis, however icteric be the complexion, the conjunctiva retains always its pearly whiteness; while it is first and most affected in icterus. The palpitations and arterial paroxysms and the muscular debility of chlorosis are absent in icterus.

The diagnosis between chlorotic palpitations and those dependent on organic disease of the heart is less easy—since both are characterized by giddiness, wanness, and since chlorosis often actually leads to cardiac disease. The distinction is therefore important. It may be exhibited as follows:

Chlorotic Palpitations.	*Palpitations from Cardiac Disease.*
Puberty and female sex predispose.	Are hereditary. [We doubt this.]
Come on with other signs of chlorosis or anemia.	Precede the cachectic colour and appearance of the patient.
Come on suddenly and depart equally so; have perfect intermissions; are worst after bodily and mental excitement, and at the period when the menses ought to appear. Remit under the measures which relieve the other chlorotic symptoms.	Never depart; but continue always with more or less violence.
Stimulants, as iron, relieve.	Stimulants aggravate.
Complexion pale, without lividity.	Lips and cheeks livid.

The author has omitted to add the presence of the anemic murmur, or *bruit de diable*, in the blood-vessels of the chlorotic patient, and the absence of this in the case of disease of the heart.

From the considerable detail, as regards treatment, into which Dr. Canstatt enters, we quote three observations only. The first is, that all the multifarious symptoms of chlorosis do not require separate attention; since depending on a common lesion, to wit, the deficient crasis of the blood, they simultaneously disappear when that fluid is brought to its normal state. Secondly, iron, if not specific in this disease, will at last accomplish a cure in by far the majority of cases: its union with the vegetable bitters ensures this result. The last observation regards the causal indication in chlorosis. This being a disease holding an intimate relation to woman's peculiar sexual constitution and wants, imperatively requires us always to keep in mind the advice of the physician of Cos: "Equidem virginibus suadeo . . . . ut citissime cum viris conjungantur." We believe that while, in many cases of chlorosis, this last prescription is, no doubt, the appropriate one, and will, by itself, prove successful, yet that medicinal and dietetic means will be found efficacious in a large proportion of instances.

Congestion. The congestive orgasm, Dr. Canstatt describes (p. 43,) as consisting "in the manifestation of a power of reaction in the sanguineous system, by which the organic power" (or *selfism*, to render literally the *ichheit* of the author,) "meets any demand upon it, or rouses itself against any hostile influence." The distinction between congestion and hyperemia is somewhat vaguely stated to be, "simply this, that in the former, the action, the movement—in the latter, the inertia, the stationary condition of the organic fluid predominates." (p. 43.) The local and external characters of these two affections greatly resemble. The diagnosis of internal congestion is sometimes extremely difficult. It is occasionally impossible to distinguish between active congestion, passive

hyperemia, and actual inflammation, until the fugitive character of the affection proves it to be congestive. Like hyperemia and inflammation, it gives rise to antagonistic and sympathetic symptoms in other organs; and through nervous reflexes and assimetrical distribution of blood, begets chillness, pallor, and anemia of external parts, when deep-lying ones are the seat of the affection.

Inflammation. The section, inflammation, which is ample without being diffuse, contains all the facts and doctrines relating to that morbid process. "So long," the author observes, (p. 56,) "as the reaction against any exciting cause continues moderate, and passes not into an excessive degree, there is congestion. Should the reaction overstep the limits and become inordinate, we say it is hypersthenic and passes into inflammation." Pathological anatomy, he remarks, concerns itself with the change of structure which inflammation causes; clinical science, with the act itself. "In a clinical sense, inflammation begins at the moment of congestion; in an anatomical sense, at the moment of the hyperemia."

The author describes the compound character of inflammation to consist "in an alteration of the local nutrition of the affected part." As this definition confounds, in some measure, inflammation with hypertrophy if not with hyperemia, we prefer, with some late writers, to recognize, as inflammatory, no morbid process which, besides being characterized by heat, swelling, and redness of the part, is not accompanied with *effusion* of some one description or another; generally of coagulable lymph, of pus, or of serum. Whether no action but such as issues in effusion is, rigorously speaking, to be pronounced inflammatory, we shall not now curiously enquire. We only mean to state that, as furnishing a convenient line of demarcation, and preventing ambiguity in pathological discussion, it is best to regard the effusion as an indispensable condition; while no practical ill consequences can possibly result from the adoption of this rule.

The author distinguishes two periods in the inflammatory process, the former of which he subdivides as follows: First. There is the well-known constriction of the capillaries, with a more rapid flow of blood through them. This, he names the period of active congestion, and assigns as its cause reflex action of the vascular nerves, in preference to spasm of the capillaries. (p. 56.) Secondly. Enlargement of the capillary vessels; stagnation and conglomeration of the red globules. This he calls the period of passive hyperemia, attributed, by some, to an increased action of the arteries with a diminished action of the veins; by others, to atony of the capillaries, in which they suppose inflammation essentially consists. Thirdly. Escape from the vessels of serum and red blood, the period of exudation, amalgamation, colliquescence of the tissues. The usual anatomical characters are given with accuracy, and then the author passes on to the "physiological signs," which, he remarks, are those about which the scientific physician principally concerns himself, and which are, by far, the most important. (p. 62.)

Pain, or rather abnormal sensations, (for, as the author justly remarks, the sensations experienced are not necessarily painful,) is the first of these physiological characters. It may, however, be absent when there

is inflammation, or be acutely present when there is none; and therefore it, as well as redness and swelling, which may on their part be due to simple hyperemia, is not pathognomonic of inflammation.

To determine the source of augmented temperature in inflamed parts would require a previous knowledge how the physiological heat of the body was maintained; whether it be a product of the respiratory process, or of certain actions in the nervous centres; or of vital interchanges between the solids and fluids; or of some reciprocal influence of the nerves and vessels on each other; or of varying capacities of the blood for caloric. It is to be remarked that the elevated temperature of inflamed parts is not subjective merely, but objective also; that the patient is not only conscious of a greater degree of heat, but that the thermometer, placed against the affected part, indicates a higher temperature.

Nerve and blood are the factors of inflammation as of nutrition, and the morbid process may begin, now in the former and now in the latter. It may originate in the nerves: 1st. By excitement of these, as, for example, when a stimulant agent operates reflexly on the vascular nerves, and, through these, affects the circulation in the capillaries, causing congestion, hyperemia, inflammation; 2d, by paralysis of the nerves, particularly of the sensitive nerves. The vascular nerves thereby lose their necessary stimulus; hence ensue stagnation of the capillary circulation, hyperemia, alteration of nutrition. In this manner, observes the author, take place inflammation of the eyes from section of the fifth nerve; inflammation of maimed limbs and joints; and the inflammation of typhus. (?)

Inflammation, again, may originate in the blood, when this fluid is so constituted as to give rise to stoppage in the capillary vessels, and thereby to hyperemia and inflammation. This form of the affection may be illustrated by artificial injections into the veins of slimy fluids, as gum-water, potato-starch, or mixtures which contain globules greater than those of human blood, as that of various animals, or quicksilver. The blood may also become more abounding than it ought to be and naturally is with fibrine and albumen; and hence, the circulation in the capillaries may be impeded, and in parts totally obstructed. Globules of pus, mixing with the blood, may produce this untoward effect. And here it may be remarked, that the fact of the globules of pus being greater than those of the blood, and unable consequently to pass the same capillary canals, furnishes an irrefragable objection to the theory of those who suppose that metastatic discharges of a purulent character may take place through the kidney, bowels, &c., without local inflammation of the mucous surfaces of those parts. Further, the blood, from being in particular states of dyscrasia, may contain particles which excite the vascular and nervous tissues, and, acting specifically on the latter, thereby beget inflammation.

All organs and parts are not equally liable to inflammation. The following is the scale of the order of liability of the various tissues to this form of morbid action: cellular tissue, skin, mucous membrane, serous membrane, lungs, liver, and the other parenchymatous glands; then muscle, the great blood-vessels, the nerves, the synovial membranes; lastly, and most rarely, tendons, ligaments, cartilage, bone. Schönlein is of opinion that parts, in which the arterial predominate over the venous vessels, are the more liable.

At page 80, the author treats of what he calls the suppurative plastic stage. Pus, he observes, (p. 87,) is not a mere educt from the blood, nor is it formed from the conversion of any single element of that fluid. It contains, on the contrary, all the chemical constituents of the latter; and the resemblance between the two is so great, that severe suppuration produces precisely the same effects as excessive venesection, while precisely the same means which improve the condition of the blood produce a similar effect on that of the pus.

Pus operates on organic tissues in three ways: 1st. Mechanically, according to the ordinary hydrostatical laws. In this way take place infiltrations into parts and abscesses, and discharges from points far distant from the original seat of disease. 2dly. It operates chemically; macerating simply (if it be healthy pus) the tissues it is in contact with; corroding them if it be ichorous or acrid. Many structural changes are wholly owing to purulent maceration. 3dly. Pus may operate in what Dr. Canstatt calls a vital manner. In this way variolous, syphilitic, vaccinic, scabious varieties of pus produce their respective contagions, and give rise to homologous morbid processes in the parts to which they are applied. This effect cannot be referred to any particular physical or chemical properties of those varieties of pus, but to specific vital action.

The therapeutics of inflammation are discussed at page 91 et seq.; and although the statements and rules are perhaps necessarily and advisedly of a somewhat general and theoretical character, and not much illustrated by particular applications, still various able, acute, and scientific directions and cautions are given, and a variety of important principles established. Our limits do not at all permit us to do more than refer very generally to this part of the work. We shall quote the following observations, partly as a specimen of the author's style of speculative discussion, partly as containing an intelligent, though not entirely novel exposition of the general objects and principles of treatment in inflammation, and in some measure in all diseases:

"In fulfilling this indication, (namely, the general therapeutic one in reference to inflammatory reaction,) what is it we propose? We seek to place the diseased organ and the organism on such a footing as shall enable their vegetative and conservative properties to operate as easily and efficiently as possible, to develope their powers, and compensate, by an act of self-reparation, for any disturbing or alterative influence of the morbid agent. It is not we or our measures that remove anomalous action. The art and the physician who accomplish this is the organism itself. All that we effect is to liberate the normal action from any oppressing or obstructing cause, and afford it freedom of exertion.

"Disease, an abnormal stimulus, itself calls forth this reaction of the organism. The reflexes of the nervous and vascular systems, which are roused by normal stimuli, giving rise to normal reaction, the same reflexes or reactions are opposed by the organism to the alterative influence of the morbid agent. These reflexes are now more and now less diffused; sometimes, in a certain sense, local, sometimes general; affect, now the nervous and vascular systems, now one of these in particular; are, accordingly, sometimes a fever, sometimes a spasm, sometimes complications of both, (as, if you will, in nervous fever.) These reactions may be continued, may be typical. They arise from excitement of the vital power, the tumultuous action produced in which varies according to the nature of the morbid excitant, according to individual constitution, according to the character of external influences, &c. This excitement of the vital power,

if it reacts more directly on the affected organ, is of itself often able to recall, and that promptly, the organ to its normal action, and to annihilate the disease. On this ground it is that fever has, by some, been regarded as a salutary process instituted by nature. But these reactions may on the other hand, by their excess, by operating on enfeebled organs, cause the most disastrous consequences, as cerebral and pulmonary hemorrhage, &c., and may therefore with equal propriety be denominated, occasionally, destructive processes instituted by nature. The very same powers and faculties of the organism, which maintain the body in its healthy action, are those which, on the occurrence of disease, become available in offering resistance to that process.

"These high reactions are what first attract the physician's notice. They are often all that he can detect or study concerning the disease. On the other hand, what calls them forth, or against what they are directed, is often obscure and concealed, the physician but recognizing striking reactions in this or that nerve, in this or that part of the vascular system, reactions which concentrate themselves on some particular organ or organs, or else involve the whole chain of organs in an unusual excitement—he may erroneously confound the reaction with the original morbid excitement. And to be sure, reactions may readily become causes of disease.

"On the judgment which he forms of these reactions, are founded the therapeutical measures of the physician. These reactions or reflexes, even when of an unusual kind, are still manifestations of the vital power. In what cases, then, shall we leave them uninterfered with? In what cases shall we venture to oppose them? In what cases shall we endeavour to subdue them, in order that disease may not be grafted on disease? In what cases shall we promote and cooperate with them? Do we propose to leave them free, we follow an expectative method of treatment. Do we chose to withstand them, we act on a sedative plan. Do we think it proper to promote reaction, we stimulate. According as the reaction is general or limited (local?) must be our measures of stimulation or sedation. According as the reaction extends particularly to the nervous or vascular department, so must sedation and stimulation. Hence, every organ, every system has its appropriate nervous and vascular *stimulantia et sedativa*.

"Can the right management of these various modes of treatment be set forth in rules? We think not. This is, of all others, the field for that dangerous arbitrary mode of treatment, which we must place and be content to place under what is called 'practical tact.' Certainly, experience leads us more and more to put faith in the mysterious language of natural instinct; and happy must he be reckoned whose mind is fitted to catch these direct suggestions at the bedside, the accuracy of the interpretation of which can often be made evident by the success of the result only, not by any appreciable process of rational deduction." (pp. 93-4, note.)

It is now generally admitted that many of the seemingly violent phenomena of inflammation are not, strictly speaking, morbid movements, but consist, at least in part, simply of energetic endeavours (reactions) of nature to oppose or rid itself of an injurious agent or influence. As Dr. Canstatt well observes, death may in this way incidentally occur from salutary efforts or intentions of nature itself, as when hemorrhagic apoplexy of the brain or lungs ensues from the reaction instituted to repel or extrude some morbid agent or influence operating on these organs or elsewhere.

The author is at pains to point out the varieties of inflammation, and to lay down rules to guide us as to when depletion is or is not indicated. Against sthenic reaction he considers, as we might expect, bloodletting the "cardinal means." He prefers, on what we think trivial grounds, venesection to arteriotomy. One of his objections to the latter is, that

Schönlein has observed abscess of the brain after opening of the temporal artery! An untoward accident so extremely rare need not, in our opinion, deter us from opening the temporal artery, when this measure is otherwise indicated, any more than the result of Dupuytren's case, in which air entered the vein should frighten us from undertaking any surgical operation, in which section of principal veins is necessary. The one contingency is not more frequent than the other, and both are to be disregarded. Moreover, were all the cases of fatal phlebitis following venesection to be set off against the accident dreaded by Schönlein, we apprehend that the odds would lie against the former in an almost incalculable proportion. In our own experience we have never met with the least inconvenience from temporal arteriotomy.

As anti-plastics against the adhesive tendencies of inflammation, he recommends mercury, nitre, and the alkalies. Dr. Alison, of Edinburgh, has lately on more than one occasion expressed doubts as to whether mercury, administered so as to affect the gums, possesses any power of controlling inflammation and its consequences. In his article on Inflammation in the Library of Medicine, (vol. i. p. 111,) he observes: "Do the symptoms of inflammatory diseases subside more rapidly and more certainly when the mercury has affected the mouth, than without that occurrence? and on this point the present writer cannot hesitate, after considerable experience, to reiterate an opinion he formerly expressed, that he has more frequently seen them aggravated or transferred to another part, on that event taking place, than relieved; and that the cases in which that combination has always seemed to him most useful have been those in which the symptoms having subsided, it was withdrawn without the mouth being affected." We would ask Dr. Alison whether, in the event of the symptoms *not* having so subsided, an issue exceedingly possible, he would not have judged it proper to continue the mercury even till the mouth was affected, because what other assurance could he have that the mineral had touched the system? In our opinion Dr. Alison's statements on this occasion are inconsiderate and extreme; but without taking time for the present to show this, we content ourselves with recommending him to consult the testimonies of several or most of his coadjutors in the very work from which we have made the above quotation, and he will find their statements in regard to the utility of mercury in inflammation, and the propriety of pushing it until the gums are affected, nearly diametrically opposite to his own. We refer him to a few only of these authorities. (Library of Medicine, vol. i. p. 355; vol. ii. pp. 56, 302; vol. iv. p. 146.)

ANOMALIES OF THE SECRETIONS. We turned to this chapter with eager curiosity, and regretted to find it less ample and interesting than we expected. Yet, although it contains nothing positively new, it presents, in a concise view, most of the facts and doctrines connected with the subject. Those lesions of secretion are principally treated of, which manifest themselves by mere excess of *hyperkrinie*, ("a barbarous term," as Krantz designates it, introduced by Andral,) or by qualitative degenerations.

In considering the effects of anomalous secretions on the organism, the author points out that the first result of excited secretive action in any particular organ, is to "concentrate" on that organ the secretive

energy and activity of the body in general, thereby enfeebling the eliminatory processes elsewhere. Thus, dryness of the skin and constipation accompany diabetes; the urinary secretion fails when profuse sweatings takes place. But this antagonism characterizes only a particular and that an early stage. Long-continued profluvia of every description lead ultimately, by inducing hydremic, pyemic, or other morbid states of the blood, to profluvia of other kinds, to colliquative sweats, to diarrhœa, to hectic with suppuration, &c. Sometimes, in consequence of excessive discharge of one element of the blood, this fluid is left nearly utterly destitute of that particular constituent, as we see happen in the serous discharges of cholera, by which the blood is rendered almost wholly fribinous. But, on the other hand, a particular element of the blood seems sometimes but to augment in proportion as it is excessively secreted or eliminated. This occurs in some cases of albuminous urine, in which the blood is found surcharged with albumen, notwithstanding the abundant exit of it by the bladder.

Hetero-plastic formations. At p. 191 there is a short section on this subject. Matter abnormally deposited in the parenchyma of organs becomes gradually solid by coagulation and "crystallization," its watery constituent being absorbed. It then either remains unaltered in the parenchyma when it has been deposited; or it augments by "apposition" of similar matter; or it is changed by the local reaction of the tissues with which it is in contact; or it becomes enlarged by a process of increase within itself, to which Dr. Canstatt gives the name of "intus-susceptive" growth.

The difference between growth by apposition and intus-susception is nosologically important. The former characterizes inorganic, the latter, organic formations. Tubercles increase by apposition merely, not by cellular development, which mode of enlargement is pathognomonic of the pseudo-plastic formations, as cancer, fungus, &c.

Cellular formation is the type of all organic growth; and a previous condition to this formation is the existence of a formative matter, or a cyto-blastema, susceptible of development. The cyto-blastema, in other words, the cystic germ or germinal cyst, has a character either of differency or indifferency. In the latter case, it preserves unchanged the same nature and qualities with which it was secreted or excreted into the parenchyma, presenting, as inspected by the eye, naked or assisted by the microscope, a homogeneous aspect. The differential germinal cyst or formation is, on the other hand, characterized by attracting from the blood materials homologous to itself, and by increasing by the intus-susceptive process. It is of a benign or *euplastic* (ευ and πλασμα) character, when contiguous parts are able to oppose, by pressure, simply its further extension. It is of a *kakoplastic* nature when, like carcinomatous growths, it betrays a tendency to gain ground on all neighbouring tissues, and convert them into a morbid constitution, malignant like its own.

Tuberculosis and scrophulosis. According to the author, these affections are identical. Tuberculous matter is deposited either on free membranes or in parenchyma. When in the former situation, as on the mucous membrane of the lungs or bowels, it may escape observation, being liable to be expectorated or evacuated. Kühn professes to have observed in the sputa of phthisical patients the molecules of tubercle;

and Magendie says they have been noticed even in the blood of persons strongly predisposed. This we for the present doubt. Canstatt is of opinion that Carswell is in error in supposing the extremities of the mucous ramifications in the lungs to be the exclusive seat of tuberculous deposit in these organs, since in many cases, the minutest air-cells have been found patent and free. Gendrin denies *in toto* the matter in question to be tuberculous, as Carswell and Alison assert it to be; and affirms it to be nothing else than the usual discharge from an inflamed mucous membrane.

Tubercle, examined microscopically, is an amorphous granular mass, wanting, as we have already remarked, the cellular structure of the cytoblastema, the rudimentary form of all organized tissue, wanting also the faculty of intus-suceptive growth by eccentric development. Our readers are familiar with the appearance and characters of tubercle, and with all the facts connected with its various modes of deposition—now miliary and isolated; now confluent in granular masses, or in berry-like or coral-like clusters, as in the lungs; now infiltrated into parenchyma; now drop-like, as on the surface of serous membrane; now cylindrical or branch-like, as in the vessels of the liver. As regards the chemical constitution of tubercle, the greatest difference of opinion still prevails among the most eminent authorities, such as Berzelius, Thenard, Dulong, Lombard, Lassaigne, Hecht, Preuss, and various others. The author would account for this contrariety on the ground, not merely that organo-chemical analysis has not yet reached an adequate degree of technical precision, but that the chemical constitution of tubercle is absolutely not always the same, but modified according to the seat of the deposit, as whether in the lungs, brain, liver, or renal cavities; according to the cachexy leading to the tuberculous development, whether arthritic, puerperal, exanthemic, (p. 207;) lastly, according to the stage of the tubercles themselves. All, he thinks, that we at present satisfactorily know is that, while crude tubercles contain a great proportion of glairy matter, hardened tubercles abound with salts. Thus Lombard found in crude tubercle, of glairy animal matter 98 parts; of salts 1·85 ditto. In chalky tubercle, of animal matter 3 parts; of salts 96 ditto.

It is worthy of remark that tubercle often gives rise to irritation of the parenchyma in its neighbourhood, in consequence of which exudation takes place; which condensing, the tubercle becomes surrounded with something like a cyst. Some have mistaken this cyst for a component part of tubercle; but its origin and history are as we have now stated.

According to Rokitanski, the condition of the blood which leads to or is produced by certain diseases is incompatible with the tuberculous diathesis. These diseases are cancer, and all maladies which give a cyanotic character to the blood, as hypertrophy of the heart; the continued patency of the foramen ovale; emphysema of the lungs; aneurism of the aorta; affections of the spine; typhus; cholera; and dysentery.

We have already stated that the author regards tuberculosis and scrophulosis as identical. The principal ground on which he does so is that, physically, chemically, microscopically tested, the morbid formations characteristic of these are indistinguishable from each other. He answers the objection that scrophulosis is a disease of infancy, tuberculosis of puberty and manhood, by urging that these different periods of

life merely determine the development of the disease in somewhat different forms and in different organs; but that, in fact, the scrofulosis of infancy is but tuberculosis of puberty and the contrary. "Is dropsy," he asks, "aught else than dropsy, although in infancy it occurs in the head, in adult age in the belly?" (p. 220.)

Dr. Canstatt's theory, as to the formation of tubercle, is wisely general, and appears to be quite as plausible as those of Andral, Chomel, Louis, Carswell, Alison, or Williams; from some of which it differs slightly or not at all. After stating (p. 222) that "the most of the symptoms of the disease seem to indicate a morbid condition of the fluids (diathesis tuberculosa) which leads to a faulty state of the solids (habitus tuberculosus)," but that, "when we seek to carry our explanations further and to explain in what that degeneracy consists, we find ourselves at a loss"—he adds, "perhaps to be more minute, we may say that the soft formative element (the plasma) destined to supply the solid nutrient constituents of the tissues is produced from a degenerative formative substance (in the albumen?) and does not suffice to supply a mature and normal plasma (fibrine); that hence, the albuminous proportion of the fluids preponderates so much, that at length, the vehicle (the serum) of that albumen is no longer able to hold it in suspension, and it is, in consequence, deposited in the form of tuberculous matter." This was the theory of the late Dr. Todd of Brighton; and Dr. Williams, in speaking of a "degraded state" of the fluids and of degraded and inorganizable depositions, as resulting from a lowered vigour of the system, and from the exhausting effects of chronic diseases, seems to hold, in part, nearly the same views, (Library of Medicine; Article, Tuberculous Diseases.)

We do not accompany Dr. Canstatt through the therapeutical portion of his chapter on tuberculosis and scrophulosis, ample and interesting though the details be. The treatment recommended is varied and eminently judicious, and always propounded with a strict reference to physiological and pathological principles. We refer the reader to the work itself, which in regard to this in common with the other subjects treated of in it, is as rich in practical as in doctrinal details.

We pass over without remark the sections on Lithiasis, Verminous Generation (ento-zoen-bildung), Malacia, and what we may freely render Ossification (verhärtung), and we come to

Fever. This, preeminently one of the *quæstiones vexatæ* of pathology, Dr. Canstatt proposes in the present volume to discuss as a general subject, reserving for the genetical or historical division of his work the consideration of it in its special manifestations. Much mutual explanation is, in our opinion, necessary between pathologists, and a clear understanding must be come to as to what is implied in the term *idiopathic*, whether it is to be understood relatively or absolutely, before any satisfactory conclusions can be expected to result from discussions respecting the nature of fever. Dr. Christison's article on fever in the Library of Medicine furnishes a lamentable proof of the justness of this remark, seeing that his formal definition of the nature of fever is contradictory, if not unintelligible. We think it unnecessary to detain our readers for a moment, for the purpose of proving a distinction between fever and inflammation. The simple fact of the intermissions of ague,

nothing analogous to which we observe in inflammation, demonstrates the non-identity of the diseases.

The author, near the beginning of the section on fever, cautions us against confounding certain symptoms of excitement with those of true reaction. "When," he observes, (p. 259,) "the optic nerve is pressed upon, there is a momentary perception of light. This is a proof of the effect of the exciting cause, not of reaction." He also regards the pains, spasms, and convulsions, which sometimes accompany fever, as explicable from the laws of irradiation and reflexion, and as not essential constituents of the disease. He illustrates reaction somewhat mechanically, by the property which enables a body originally endowed with a certain degree of elasticity to resume, when elongated by any force, its natural dimensions. "In the organism," he remarks, "there is a vital endeavour resembling the elasticity now described." With deference to Dr. Canstatt, we cannot forbear remarking that the illustration adds not a tittle to our knowledge of the subject in question, to wit, the power of vital reaction. What we name, *in concreto*, disease, he thinks is to be regarded as consisting of a series of morbid influences or movements tending to overcome the vital elasticity on the one hand, and efforts of reaction on nature's part on the other.

The usual divisions of fever are adopted, namely, into the stages of invasion, reaction, and crisis; or the period at which either the disease or the reaction finally predominates. The stage of invasion is, of course, sometimes so violent, as in cases of plague, cholera, death by lightning, that there is no subsequent one. The prognosis in the stage of reaction is bad when there is a striking discrepancy between the objective and subjective symptoms; as, for example, when the patient with a dry tongue feels no thirst, with a cold skin complains of heat or the contrary; and when all looks for the worst, thinks himself well and boasts of his strength.

In discoursing of the crisis, Dr. Canstatt justly, we think, refuses his assent to the notion that the discharges, which occasionally signalize the accession of this stage, constitute or contain the *materia peccans*, the presence of which in the system has caused the morbid commotion. He explains these discharges as the mere consequences of the crisis; or, in other words, as simple incidental proofs that the organs have assumed their suspended or impeded functions and actions. Strictly and correctly speaking, the crisis itself is this recovery, or, as the author calls it, this regeneration of the functions; the discharges being nothing but at once the effects and the proofs of that regeneration.

The author's account of what he calls the "rhythm" of fevers is curious, and we believe original. He attributes the exacerbations in febrile diseases, not as is usually done, to fresh ebullitions as it were of the morbid process, but to bolder and more vigorous manifestations of the reactive energy of the system; and accordingly he accounts for a fever being a continued one, by supposing that the reaction is, in this case, constant and sustained. The theory does not certainly solve all difficulties, but deserves attention, and, at any rate, indicates ingenuity.

The causes of fevers are very briefly discussed. (pp. 271-2.) With regard to the question whether there be or be not such an entity as

essential fever, we think Dr. Canstatt, in his very concise remarks, states, and that with singular precision, all that can be satisfactorily, for the present at least, laid down on the subject.

"There is" he observes, "no fever, without previous alteration of the organism, in some one or other of its constituents, fluid or solid. Essential fever which comes not under this definition is a non-entity. It can, however, happen that the organism, thus fevered, may so resist the alteration of the blood (as in exanthemic or miasmatic cases) that no fixed or localized disease of solid parts shall ensue. In this case, the fever (or rather the alteration of the blood connected with it) is primary as regards such local disease, yet not primary in itself, but is always an effect; always secondary to that primary vitiation of the blood," &c.

Want of space prevents us from accompanying the author in his Treatment of Fever; but the reader will find Dr. Canstatt's views on this important matter repay the trouble of examination.

The neuroses. It is not our design to give anything like a thorough digest of this part, nor is it necessary. Much of the information which it contains is to be found elsewhere, namely, in the writings of Romberg, Rey, Müller, Sachs, Henle; and in various English works—the principal contents of which, however, are derived from the above sources, or from other continental productions. The translation of Müller's Elements of Physiology, by Dr. Baly, offers to those not familiar with the language of the author the means of becoming acquainted with the most recent, authentic, and philosophical doctrinal views in neuro-physiology, and, to a considerable extent, in neuro-pathology. Referring the reader, therefore, to these and other sources of information, we shall confine ourselves to merely partial notices of Dr. Canstatt's chapter on the Neuroses.

After an exordium, in which the author refers to the rapid progress which neuro-physiology is making in comparison with its "sister" science, neuro-pathology, he proceeds to lay down, first, the laws of nervous irradiation, or the transmission, by the medium of the cerebro-spinal axis, of any irritation of one nerve to another homologous nerve—as of a motor to a motor nerve; and, then, the laws of nervous reflex, or the transmission by the same circuit, namely, the cerebrospinal axis, of any such irritation of a nerve to other but heterologous nerves—as from a motor to sensitive or trophical nerves. Our readers are familiar with these laws.

In respect of their origin or seat, Dr. Canstatt divides neurotic affections into central, peripheric, and synergic. In the first of these, the morbid cause is seated in the nervous centres; and we are generally able to recognize lesions in this situation by the affection being radiated over a variety of nerves taking their origins contiguously in the brain, but distributed on the opposite side from that on which the pain is felt. Affections of cerebral origin have, moreover, no intermission, but are continued. A neurotic affection, again, of peripheral origin, as from a swelled ganglion, or a wound, is distinguishable by being confined to a particular tract or nerve, or if it does give rise to irradiative or reflex actions, these take place on the same side with the primary affection. Synergic neurotic affections are just those of irradiation or reflex, corresponding almost exactly with lesions involving the excito-motory phenomena of Dr. Hall, and are very various; comprehending blepharospasm,

laryngismus stridulus, asthma, hiccup, vomiting, tenesmus, strangury, hydrophobia, chorea, hysteria, tetanus, epilepsy. Several of these are remarkable for making their attack during the first sleep. Some are so gradual that the brain has time to watch their approach from the periphery, before the irradiative or reflex effect takes place. This is seen in the case of the *aura epileptica*, and *globus hystericus*. It is to be remarked, however, that the *aura* is sometimes also perceived when the cause of the epileptic affection is seated in the brain itself, or is "centric," to use the language of Dr. Hall.

The preceding division is founded on the modes of origin of neurotic affection. The classification, according to *kind*, proposed by the author, is as follows:

Sensible
Motory
Trophical
Intelligential
} Neuroses.

These he further subdivides:

Erethism of Sensible Nerves . .	Algies* (Hyperesthesies.)
Paralysis ditto . .	Anesthesies.
Erethism of Motor Nerves . .	Spasm.
Paralysis ditto . .	Paralysis.
Erethism of Trophical Nerves . .	Nervous or Erethismal Congestion, Hemorrhage, Secretion.
Erethism of the Psychical Nervous Province	Psychical Anesthesies—Imbecility.
Pathological Idiosyncrasies.	

Our physical acquaintance with the trophical department of the nervous system is extremely limited. As the author justly observes, we are still at a loss to determine whether the sympathetic should be viewed as derived from, or as merely sending branches to the spinal and cerebral nerves, with which it communicates. The complete mixing also of the nervous filaments in the ganglia of the sympathetic will probably baffle, for ever, all efforts to gain a knowledge of the structure and physiology of the nerve. From the fact that parts, the sensible nerves of which pass through the sympathetic, have less sensibility than those parts, the nerves of which communicate directly with the spinal system, he is disposed to look favorably on Reid's theory of the sympathetic ganglia being somewhat of the nature of non-conductors or isolators. But Müller and other physiologists explain this phenomenon differently.

Dr. Canstatt regards a natural "high temperature" or constitutional facility of being excited by stimuli as peculiarly predisposing to neurotic affections, (p. 290;) and from the page now referred to on to page 295, we have an interesting sketch of other predisposing causes, cosmical, telluric, climatic, atmospheric, dietetic. Reference is made (p. 294) to those forms of nervous affection which have a "psychological contagious" origin, as chorea, hysteria, epilepsy, induced in excitable persons by the mere sight of others suffering from these disorders. Neurotic affections, such as the algies and spasms, are said by Dr.

* We use this word for want of a better; and as the corresponding translation in English to the German "Algie," employed by the author.

Canstatt to affect the right side more particularly; lesions of anesthesy and paralysis, the left. But this requires confirmation.

Some interesting observations follow, on the "rhythm" of neurotic affections. The excitability of the nervous system becomes exhausted under long stimulation of any sort, and sinks into a species of sub-paralysis; during which, the same exciting cause does not produce the same reaction, as at first. But by and bye, when the organism has re-accumulated, during this dormancy, excitability and power, a new manifestation of reaction takes place. This is illustrated when any swelling, as a node on a bone, presses on a sensible nerve. The node may remain undiminished in size, but the pain intermits. The sympathetic, it is well known, differs from other nerves, by the circumstance of the rhythm of its sensibility being apt to continue a long time after the exciting cause has been withdrawn. In some respects, all nervous affections are apt, if allowed to continue, to acquire what the author fancifully calls a burgher right, (bürger-recht.) The epilepsy, strabismus, amaurosis, induced by the intestinal irritation of worms, may remain after the expulsion of the original cause.

With regard to the crises of certain neurotic affections, the author cautions us not to consider the vomiting of blood or the melæna with which neuralgia cœliaca sometimes terminates, or the diarrhœa which occasionally marks the disappearance of a psychical affection, and other like coincidences, as essentially connected with the more prominent nervous lesion. These may merely indicate the withdrawal of the morbid cause which gave rise simultaneously to the neurotic and coincident derangement, whether diarrhœa, hemorrhage, vomiting; and the resumption, on the part of the organism, of its wonted vigour and regularity. No more is the sleep, in the course of which many neuroses take their leave, to be viewed as the crisis. It, *in common* with the cessation of the nervous disorder, is the effect of the crisis, not the crisis itself; two things very distinct.

An affection of one part of the nervous system is apt to extend to other parts. Thus peripheral neuroses tend to become central also: a long-continued peripheral neuralgy may and often does affect the psychical department of the brain, giving rise to delirium or mania. So also hallucinations, in consequence of hyperesthesies of the nerves of sense, have become at length profoundly psychological. Hysteria, occasionally, merges into nymphomania; epilepsy, into idiotcy; all which successions of secondary on their respective primary affections illustrate the law above laid down. So also amaurosis of one eye is frequently followed by that of its fellow. This propagation of lesion takes place more readily from the centre to the circumference than the reverse.

From the reflex property of the cerebrospinal nerves, we receive an explanation of (to adopt the language of the old physicians) the progression of a neurotic affection, *sine materia*, into one, *cum materia*. This results from reflex actions of the cerebrospinal on the organic, vaso-motory, or trophical nerves. Every paroxysm of an erethismal neurosis is accompanied by vascular symptoms: the part which is the seat of the neuralgy becomes injected; its arteries pulsate more strongly; it swells; its secretion is increased, (if it be a secreting organ or surface:)

these changes and the consequent derangement of the capillaries of the part lead to plastic alteration, to hypertrophy, to softening or to hardening.

The prognosis in nervous diseases is concisely but acutely stated. Neurotic affections are so apt to become rhythmical, that the longer they continue the more gloomy is the prospect of their entire and final removal. Those, of course, which depend on structural changes, are the most hopeless. Peripheral are more curable than central neuroses; those of which the causes are apparent and easily removable than those of an opposite sort. Thus convulsions from worms present a fair prospect of cure. Erethismal neuroses are more tractable than those of an anæsthetical character. Spasmodic affections are more serious than neuralgic. Certain neurotic maladies, as tetanus, hydrophobia, &c. are, from the circumstances which attend them, essentially dangerous; but hysteria, hypochondria, and even epilepsy, are not incompatible with reasonably long life. The tendency of the neuroses to pass into inflammation, or into structural change, as pointed out in the preceding paragraph, is always to be kept in mind.

We do not accompany Dr. Canstatt in his therapeutic observations. He seems to place great faith in the metallic sedatives, the salts of zinc, bismuth, copper, silver, iron, arsenic: and states that, of these, zinc, copper, silver, as well as the alkalies, are more adapted for lesions of the motory nerves; bismuth, iron, and arsenic, for lesions of the sensible nerves. As "notoriously" sedative, he recommends Artemisia root. He is very sceptical as to the advantages to be expected from revulsives, employed with the view of diverting the nervous excitement from one locality to another, since he thinks that the facility of intercommunion between all parts of the nervous system makes it as likely that the revulsive shall augment the morbid excitement as drive it to another organ or part.

But our limits forbid us to prosecute further an examination of this volume; and we deem this the less necessary, as in his handling of the special neuroses, to wit, the neuralgies, spasmodic affections, anesthesies, akinesies, and the psychoses, the author follows, in a great measure, the principles laid down in regard to the neuroses considered as a class, and of which we have endeavoured to give the reader a partial idea.

We have thus gone through, in the cursory manner we proposed, Dr. Canstatt's able production. Our opinion of its merits is so fully implied in the course and manner of our analysis, that it is not needful to enlarge on this subject. We regard it as a work considerably above mediocrity; as very careful in its statements of facts; as scientific in its deductions from these, as well as in its general views and reasonings. As Falstaff was, on his own report, not only witty in himself, but, moreover, the cause of wit in others; so Dr. Canstatt is not only an intelligent and thoughtful writer, but has the art and merit of giving rise to trains of useful reflection in his reader. His speculation rarely exceeds the legitimate bounds of probability, and is in general based on authentic and substantial physiological and pathological data. The author evinces a sufficient degree of professional reading and erudition, and appears familiar with British medical literature, both of an earlier and a more recent date.

The chief defect of the work is an occasional vagueness both of expression and idea, which, it cannot be denied, is a common fault of German authors, even when handling scientific and practical subjects. We look with interest for the second part of this work; since favorable as is our opinion of the author as a merely practical writer, we think it likely that he will show himself to be still better qualified for the more abstruse and theoretical discussions, to which that branch of his subject will necessarily lead.

Art. IV.

1. *The Influence of Tropical Climates on European Constitutions.* By James Johnson, M.D., Physician to the late King, &c., and James Ranald Martin, Esq., late Presidency Surgeon, and Surgeon to the Native Hospital, Calcutta. Sixth Edition, revised and greatly improved. —*London*, 1841. 8vo, pp. 693.
2. *Researches into the Causes, Nature, and Treatment of the more prevalent Diseases of India and of warm climates generally.* By James Annesley, F.R.S. F.S.A., late President of the Medical Board of Madras. Second Edition.—*London*, 1841. 8vo, pp. 606.
3. *The Madras Quarterly Medical Journal.* Edited by Samuel Rogers, Assistant-Surgeon, Madras Establishment. Vol I. for 1839. Vol. II. for 1840. 8vo, pp. 486, 462.
4. *Transactions of the Medical and Physical Society of Bombay for the year* 1840.—*Bombay*, 1840. 8vo, pp. 224.
5. *The Indian Journal of Medical and Physical Science.* Edited by Fred. Corbyn, Esq., Garrison Surgeon of Fort William.—*Calcutta*, 1840.

The subject of tropical disease is one which the prodigious amount of our intertropical colonization renders deeply interesting to us; and it is satisfactory to us to add, that our medical literature regarding it is, as it ought to be, extensive and valuable. The latter fact is evinced by the works now before us; two of them showing by the editions they have passed through that they are stamped with the seal of public approbation; whilst the Medical Transactions and Journals show the probable progress of this branch of literature in the hands of the British medical residents abroad, who display so much activity in collecting information and communicating it to their contemporaries and successors. We consider, then, that we have before us the labours of two generations; those, "rude donati," who have earned reputation by intertropical research, and the younger aspirants for fame, who manifest a disposition to follow in those paths which their predecessors have so honorably trod. A complete analysis of works so voluminous our limits preclude, but we cannot allow them to pass through our hands without some consideration of the more important portions of their contents.

As might be supposed, the etiology, symptoms, treatment, and mortality of acute disease form the most prominent subjects of these volumes. On all these points we find much valuable information, and much that we feel disposed to transfer to our pages; but that on which we feel at

present most disposed to dwell, not more from its importance, than from the obscurity which still overshadows it, is that of the causes of tropical diseases. The writers before us, we are happy to observe, have entered on this branch of their subject with a full perception of its difficulties. One of them, Mr. Martin, the collaborator of Dr. Johnson in this the sixth edition of his work, places these difficulties prominently before the reader in his preface.

"An enquiry into the external causes of disease in hot climates, and a reference to the topographic and statistical facts detailed in the recently published Reports on the health of the British Army and Navy, must satisfy any person that some of the modes of investigation hitherto pursued are insufficient to a full or accurate illustration of those all-important questions; for, so many exceptions have been found in the East and West Indies, but especially in South America, to the reputed causes of many diseases, as to make it no easy matter whether to determine in favour of the rules commonly received, or of the numerous and extended exceptions to them." (Preface, p. vi.)

Heat as a cause of disease. How far heat is abstractedly a cause of disease is an important consideration, and one which does not appear to us to receive that formal attention from Mr. Annesley, at least, which it had a right to claim. Major Tulloch, in his West Indian Report, it will be remembered, expresses the opinion founded on statistical evidence, that mere heat has little influence in the production of disease, though he is disposed to attribute power in this way to heat cooperating with moisture. The narrative, however, by Messrs. Mouat and Henderson, of the march of the 13th regiment of foot from Nuddeah to Berhampore, in 1826, which will be found in the second volume of the Madras Quarterly Journal, and which is copied in the work of Messrs. Johnson and Martin, shows the abstract power of this agent in the eastern hemisphere to be very great indeed. The left wing of the regiment marched from Nuddeah for Berhampore, a distance of sixty miles. Dr. Mouat, who accompanied it, suggested that the marches should take place at night, the weather being very sultry. Though this suggestion was adopted, there was great distress during the march, and sixty-three men became dangerously ill, but no deaths occurred. The right wing, accompanied by Dr. Henderson, moved on the 3d of May from Nuddeah. The same suggestion relative to marching at night was given as in the instance of the left wing. It was not, however, so successfully acted upon, for the camp ground was not reached till after the rising of the sun, which immediately after daylight shone forth with overpowering splendour, whilst an excessively hot wind added to the effect. The day, we are informed, closed with the loss of eighteen lives, and left sixty-three sick in hospital. A halt of one day was indispensable.

The party reached Berhampore on the 8th. Three more fatal cases occured during this period, constituting a total of 21 deaths. The greater part of the sickness and all the mortality took place in a detachment of 278 recruits, who had recently joined the regiment. The old soldiers suffered little: natives not at all. The symptoms are thus stated by Dr. Henderson:

"They complained of difficult breathing, with a sense of tightness and oppression about the chest, followed by giddiness, burning heat of the eyes, and a sense of general fulness about the head, in many amounting to excruciating

pain, succeeded by loss of sense and motion, faltering of the tongue on attempting to speak, fulness of the eyes, dilated and fixed pupils, violent twitching of the muscles of the face, particularly those about the mouth, subsultus tendinum, and involuntary stools. Along with these symptoms, the patients had a strong, full, and frequent pulse, tremendous throbbing of the carotid and temporal arteries, flushed, swollen, and sometimes livid countenance, and throughout, a parched and burning skin." (Madras Journal, vol. ii. p. 326.)

In relation to treatment it was observed that two individuals who were largely bled, became convulsed and died, and after death it was found that, though the heart was empty, the vessels of the head were loaded with blood. It was thus "clearly indicated that whatever it was that excited the heart's inordinate action, bloodletting would not subdue it; for as long as a drop of blood remained, it was sent to the head." The plan of treatment ultimately and successfully adopted was the employment of moderate bloodletting, cold affusion, cold water permanently applied to the head, and mercurial purgatives. One very obvious portion of this treatments, cold water to the head, we have ourselves seen employed by the peasantry of Spain and Portugal under similar circumstances; and we have likewise observed in analogous cases, even in this country, more relief from cold to the head, and prompt local bleeding from it, than from any quantity of blood drawn from the general system.

Dr. Murray, inspector-general of hospitals, has some valuable remarks respecting the influence of heat in the same journal:

"It appears to me," he remarks "that few (if any) authors have made us fully aware of the extent to which simple exposure to high temperature causes febrile disease in India; or have given the history of the symptoms proceeding therefrom with requisite precision; most of them having mixed up their description of such affections with the inflammatory varieties of paroxysmal fevers produced by terrestrial (vegeto-animal) exhalations concomitantly with other causes. I have heard doubts expressed as to the nature and proper name to be given to morbid affections arising from high temperature; and I apprehend there is an essential pathological difference between those arising from exposure of the bare head to the direct rays of the sun, or from exertion under strong heat, and such as are induced by the influence of high atmospheric temperature *in the shade.* In the former case, strong excitement is at once produced in the organ affected by the direct stimulus of the cause. Thus, in the case of exposure of the bare head to the sun, the scalp being protected by the hair, and peculiarly constructed, does not blister as the skin of the other parts of the body would do, if exposed to strong solar influence; but its temperature becomes exalted, and the caloric traversing through it and the skull, gives immediate rise to active hyperæmia and inflammation of the contents of the cranium. In the latter case, the application of the morbific agent being on the general system, the cerebral affection which results appears in a different manner: at first there is nervous depression or collapse, and sanguineous congestion, on which reaction follows." (Madras Journal, vol ii. p. 337.)

The affection arising from insolation, Dr. Murray regards as encephalitis, and, in many instances, we believe, correctly; but in others, which we have ourselves witnessed, though not in India, the promptitude of recovery has convinced us that the vascular condition did not pass beyond the limits of hyperæmia. He is of opinion, too, that there seems no doubt that fevers of remittent character, analogous to yellow fever, are frequently induced from the simple influence of intense solar or atmospheric heat; and that these diseases bear a resemblance to those arising

from marshy lands, but they are not identical with them. This is an important remark, for it tends to illustrate the occurrence of diseases, such as are ordinarily ascribed to the influence of malaria in localities where the commonly reputed sources of this poison are not discernible. It is well known, and we have already remarked upon it,* that the appearance of what was supposed to be marsh fever in situations where no vestige of marsh was discernible has tended considerably to unsettle our opinions regarding malaria. This remark of a writer of so much experience and acuteness as Dr. Murray, renders it at least probable that a further investigation of the real character of the diseases prevailing in such localities may throw light on the obscurity at present existing on the subject.

Among other morbific causes, malaria receives an ample share of attention in these volumes. Mr. Annesley has a long and valuable chapter on the subject, comprehending a description of the situation, soil, and vegetation, calculated to engender the poison. We do not recommend it to especial notice for any novelty in the facts or opinions,—indeed the writer seems sedulously to avoid doubtful or debatable ground; but for its comprehensive, and we would say, to the student, very instructive view of the ordinarily received doctrines. On one controverted point only does he touch, that of salt marshes.

He remarks that the copious extrication of unwholesome effluvia from salt marshes and partial inundations of the sea has long been admitted, and has only been disputed by one writer of eminence, who instances, in disproof of the position, the salt marshes of one particular district in the western hemisphere. He considers, however, that there is probably some peculiarity, in this case, in the soil and its productions, such as its consisting of a deep bed of sand or gravel but imperfectly covered with vegetation, constituting it an exception to a general rule. But where the soil is deep, of a rich, dark, or clayey mould, or in any respect absorbent, and still more so if it be covered by a rich, rank, or succulent vegetation, and not admitting of a speedy drainage of the waters which may inundate it, insalubrious exhalations are copiously formed; and on all occasions of inundations by the sea, the formation of deleterious effluvia in such situations is abundantly increased. Examples of devastating pestilence from such a cause are frequent at the mouths of the Ganges, the Irrawaddy, and the Indus, and numerous other places in India. This very deleterious effect of salt water, Dr. Annesley does not ascribe to any special septic tendency of salt in small proportions; nor does he speculate on any peculiar chemical decomposition it may undergo or cause in other substances; but he thinks it owing to the quantity of animal matter sea water contains, which occasions it to run faster into putrefaction than fresh water, when subjected to a warm temperature and *kept at rest*. This latter point, *the keeping at rest*, is evidently essential to the pernicious effect. On this point we have the following remark from Dr. Johnson:

"But in May and June, when the rivers are shrunk far within their autumnal boundaries; when the heat is excessive; and when the tides are so rapid, that the bore, as it is called, rushes up past Calcutta, sometimes with the amazing

* See Major Tulloch's West Indian Report, p. 102; and British and Foreign Medical Review, vol. VIII. p. 216.

velocity of twenty miles an hour, not entirely stopping till it reaches Nia-serai, thirty-five miles above the capital; then, indeed, at low water, each side of the river presents a broad shelving slope of mud and mire, covered with vegeto-animal remains, in all stages of putrefaction, and disengaging the most abominable stench; yet no ills whatever are produced by such exhalations." (Johnson and Martin, p. 92.)

The writers before us prudently abstain from speculations on the *nature* of this great morbific agent of tropical regions. Dr. Annesley's expressions on this subject depict very correctly our knowledge, or rather ignorance regarding it:

"The sum of our knowledge," he remarks, "of the nature of this poison seems to be, that it proceeds from those elements which exist in a rich soil and nourish the vegetable and animal kingdoms; and that these elements, when subjected to the action of the sun, together with the influence of the air and moisture, form new combinations, which are volatilized by the sun's heat, and readily combine with the moisture present in the lower strata of the atmosphere."

We approve of this cautious and general expression; but yet we would suggest that Professor Daniell has pointed out a path of investigation which, we trust, our intertropical brethren will feel it their duty to pursue.* What this gentleman has published regarding the sulphuretted hydrogen in the waters of western Africa; its probable dependence on the decomposition of sulphates, existing either in sea water or the soil, by the carbonaceous matter of decayed vegetables; and the apparent connexion between the generation of such gas and the occurrence of fever and mortality, as evinced during the expedition into the interior of the Niger, by Messrs. Macgregor Laird and R. B. Oldfield, though it does not suffice to identify sulphuretted hydrogen and malaria,—shows that this gas is at least a frequent concomitant of the poison, and further investigation may prove it to be something more. Might not the soil of places like Up-Park Camp in Jamaica, and Maroon Town in the same island—the relative sickness of which presents striking anomalies, according to the ordinary doctrines of malaria—be subjected to chemical investigation, with the prospect of explaining the anomalies, and of confirming or refuting the opinions of Professor Daniell? In the former situation, with an *apparent* exemption from the sources of miasmata, 140 per 1000 die annually; in the latter, surrounded, according to received opinions, with the sources of disease, the mortality is but 22 for 1000 in the same period.† A chemical analysis of the soils of places so strongly contrasted might have an important bearing, either in the way of refutation or confirmation, on the Professor's theory. Were this a mere matter of speculation, we should be less earnest on the subject, but the familiar chemical fact that sulphuretted hydrogen and chlorine gas cannot coexist, gives it an important and practical character.

Both of the systematic works before us treat of the predisposing causes of intertropical disease, those causes which are auxiliary to the great

* See Professor Daniell on the Spontaneous Evolution of Sulphuretted Hydrogen in the Waters of the western Coast of Africa and other localities, in the London, Edinburgh, and Dublin Philosophical Magazine, for July, 1841, and Nos. 43 and 44 of the Medical Gazette.

† Tulloch's West Indian Report, pp. 102-3.

vegeto-animal source, in the same tone. Both speak of the depressing passions as very materially instrumental in inducing disease, and their influence is illustrated in Dr. Johnson's work, by striking and instructive examples. By both is indolence and vacuity of mind considered as auxiliary to disease, and its opposite condition as a preventive. Dr. Annesley expresses his sentiments on this head happily and judiciously :

"A calm, confident, and well-employed mind, moderately occupied and interested in the objects of its pursuit, unruffled by vicissitudes of temper, and undisturbed by inordinate indulgence of its desires, with a moderate but sufficient gratification of its wants or wishes to give a foretaste of more perfect fruition, and to leave still more to hope for and to aspire after, so that its capacity of gratification be not exhausted, or its means of enjoyment diminished, is, upon the whole, that state of mind which most successfully opposes the causes of disease."

This is perfectly true ; but Dr. Annesley must be aware that he has depicted both a mental constitution and an assemblage of circumstances which his own knowledge of mankind and the world must have taught him are rather the exception than the rule, and to enjoy such safeguards from disease has hitherto been the lot of few, whether at home or between the tropics. We find no fault, however, with his indicating what all should aim at, though but few attain. All the writers concur both by example and precept on the necessity of temperance. Dr. Annesley expresses himself on this head with his usual clearness and succinctness. He says, that the diet should be nourishing but not heating ; animal food should be taken sparingly, and spirituous liquors and strong wines entirely avoided. The lighter and thinner wines may be resorted to in moderation, but excess even in them should be shunned.

From the consideration of morbific causes we pass to that of the diseases induced, in the first place passing in review the sentiments of our authors regarding a malady which, we have occasion to know, ought not to lose its interest in the eyes of the European observer.

Cholera. In the present volumes we do not find much on the subject that has not been said before ; but we find some of the previously existing information arranged in a more statistical and convincing form. It has ever appeared to us a matter of importance to decide, whether the epidemic which pervaded Europe in 1832 and a portion of 1833 was identical in character with the disease of India, from which it was generally supposed to be an offset. We were impressed with the conviction at the time of the prevalence of the epidemic in England, from a perusal of the Indian Reports, that there was a difference between what we there read and what we were then observing, and this on a very important point of the English disease, the diarrhœa. We can declare, from an experience founded on more than a thousand cases, that serous diarrhœa, in which the discharges, after the evacuation of the fecal contents of the intestines, possessed the rice-water character observed in the more advanced stages of the disease, was the first symptom which occurred. To this rule we found no exception in cases of which we had an opportunity of tracing the progress. This diarrhœa might precede the other symptoms by but a few hours ; but sometimes it did so by two or three days, the variation depending apparently on the degree of diarrhœa and the strength of the patient. Dr. James Johnson apparently takes the same

view of the initiatory symptom, for he says, from an extensive observation of cholera, as it appeared in England, he is perfectly satisfied that the disease is "a serous hemorrhage from the bowels,"—a phrase, the grammatical accuracy of which may be cavilled at, but which depicts very exactly its early stage, and explains extremely well its subsequent character. The experience of the writer of the article Cholera, in the Cyclopædia of Practical Medicine,* which he wrote, as he informs us, from observation of the disease when prevailing epidemically in the north of England, has led him to the opinion, that serous diarrhœa is the first stage of this formidable disease, and that due attention to this stage will prevent much subsequent mischief. Observation of the disease, in India, however, gives different results in relation to diarrhœa. These have been extracted from the Indian Reports, and presented in a tabular form in his book by Dr. James Johnson. From this valuable table we learn, that of sixty-four writers whose opinions it embodies, five only mention diarrhœa as having preceded the other symptoms; whilst a considerable majority of the other fifty-nine explicitly declare that there was no precursory diarrhœa; and, it being only justice to those who omit all mention of it to suppose, that had it occurred it would have been recorded, it follows that there was a very material difference in the disease in the two localities, India and England. How far the difference may be considered specific, or sufficient only to constitute the Indian and European diseases varieties of one and the same malady, we should hesitate to decide.

If this view, that cholera in this country consists in its first manifest symptoms of a discharge of serum from the intestines, be correct, the question arises, on what condition of the intestinal exhalents or of the general system is this discharge dependent? We profess ourselves unable to answer this question, and we know of no positive researches into the disease which can aid us in doing so. Suggestions, however, have been thrown out by Dr. Prout, which, proceeding from an individual so singularly learned and ingenious, we think not undeserving of notice. This gentleman remarks,† that of all the causes which produce forms of disease connected with the development by the secondary assimilating process of oxalic acid and the other indefinable [acid?] principles down to lactic acid, malaria is the most frequent. He adds, moreover, that at the time of the appearance of the cholera in London, he observed a cessation of the common lateritious sediments from the urine under circumstances calculated to produce them, whilst this fluid presented the character distinctive of the oxalic acid diathesis. At the same time there was remarked an unusual acidity of the saliva and the cutaneous exhalations. Coinciding with these phenomena, Dr. Prout observed a positive increase of the weight of atmospheric air, similar to what might be supposed to be produced by the diffusion of a *heavy gaseous principle* through the lower region of the atmosphere. So far proceed the remarks of Dr. Prout: we can confirm them as to the acidity of the cutaneous exhalations in those actually labouring under cholera, and likewise in another malarious disease, dysentery.

On the subject of contagion, as relates to the disease in India, there

* Dr. Brown, of Sunderland; Cyclopædia of Practical Medicine, vol. i. p. 388 et seq.
† Prout on Stomach and Urinary Diseases, 3d edition, pp. 20-1.

seems little diversity of opinion there. Mr. Annesley thinks that "all the occurrences which, at first sight, seem to favour the doctrine of contagion," may be explained on another principle. Dr James Johnson gives a valuable summary of opinions on the question in the table we have already adverted to. One witness only thinks it decidedly contagious; one suspects it to be so; one is doubtful; one leans to contingent contagion; one regards it as endemic and contagious; another as being slightly contagious; one is inclined to think it contagious; another as sometimes communicable; whilst two regard it as infectious. Thus ten are imbued with various shades of contagious doctrine; whilst thirteen declare that it is decidedly not contagious. To this discordant list are to be added forty-two who make no allusion to contagion, and, as Dr. Johnson remarks, since the queries of the Madras Board particularly directed the attention of medical officers to the subject of contagion, we may fairly conclude that, where no allusion to contagion is made, no proofs of it presented themselves to the observers. This reasoning appears conclusive, and it follows that the testimony against contagion is, at least, as five to one, (55 to 10.) Of the forty-two parties who make no allusion to contagion, the great majority speak of it arising from some atmospheric or terrestrial cause.

We do not find much to extract on the subject of treatment. As relates to the disease in England, Dr. James Johnson expresses an opinion perfectly coinciding with our own—that by due attention to the first stage of the disease, that of diarrhœa, all the subsequent mischief will be prevented. The same opinion was long ago expressed in the article in the Cyclopædia of Practical Medicine, already referred to. The truth appears to be, that influenced probably by the Indian Reports, which, treating of something different from what we had to deal with, dwelt only on the treatment of the disease in the stage of spasm or collapse, our proceedings in cholera were at total variance with the principle observed in all other diseases; instead of dealing with the initiatory stage where we had power, our attention was concentrated on the appalling symptoms of the advanced or even closing scene, where we were powerless or nearly so.

With regard to the treatment of the disease in India, we meet little meriting notice, excepting a sensible and very decisive remark by Dr. French, in his Report on Cholera in the 49th regiment, in the second volume of the Madras Journal. This gentleman says that, "good nursing is of the greatest moment, from the onset to the termination; and that when patients do recover from a severe attack, more is to be attributed to the kind assiduity of the attendants, and to the judiciously sparing use of medicine, than to the trial of a farrago *of everything that can be thought of*." Dr. Murray thinks very favorably of the effect in the advanced stage of hot saline enemata, deeming them the only means possessing any influence over the state of collapse. The ingredients employed are: common salt one ounce, carbonate of soda or potash one drachm, and of water at 120° Fahrenheit one pint. An enema of this kind is given every half hour, hour, or two hours, till the circulating powers are excited into reaction, and the pulse rises to a satisfactory degree of strength. Dr. Murray remarks, that he does not consider this remedy as infallible; a proposition which we see no reason to controvert,

but which, on the other hand, is strongly confirmed by the Report of Mr. Morgan, surgeon of her Majesty's 57th regiment. This gentleman gave the saline enemata an extensive trial, and then came to the sober conclusion, that "saline enemata are probably as good as any other single remedy; but they are no specific, and they are not to be relied upon for a cure of an intense case of the disease."*

We have enlarged the more in our extracts relative to cholera from a conviction that the disease ought not to be considered unimportant, even in this country. It is true that in contradiction to the prophecies of the class, whom Dr. Johnson sneers at as choleraphobists, we have had no epidemic of the disease since 1833; but we can truly state, that not an autumn has passed since that period without our seeing cases identical in character with the epidemic, and of these cases there has been a proportion fatal. They have never been sufficiently numerous to be considered as more than sporadic; but it has appeared to us that the serous disease has, since the epidemic, very much taken the place of our ordinary autumnal bilious cholera.

Sweating sickness. Closely allied, as it appears to us, to the worst form of cholera, and bearing a close relation to the *febres intermittentes malignæ*, and *algidæ* of Torti and our own Morton, is the Malwah sweating sickness, described by Dr. John Murray, assistant surgeon, Bengal Horse Artillery, in the second volume of the Madras Journal. England is now happily, from its improved civilization, exempt (with the recent exception of the epidemic of cholera) from those intense pestilences which besieged our ancestors, and there is a degree of interest in being carried back to the forms of disease with which English physicians from the days of Caius, and probably earlier, to those of Sydenham and Morton, had to combat. Dr. Murray, who is evidently a man of learning and talent, has selected for this disease, and we think appropriately, the name "Sweating Sickness," so famed in English story. He shall describe it himself:

"The symptoms of this disease commenced with rigors or chilliness, followed by dull headach, increased heat of skin, and dilated pupils; there was at the same time a burning sensation at the epigastrium, with restlessness and thirst, and, generally, copious watery motions smelling like the flesh of carnivorous animals slightly tainted. In many cases there was vomiting of a similar fluid, attended with cramps in the extremities; and the skin soon became bathed with perspiration. There was also great oppression in the breathing, with anxiety and uneasiness at the precordia, and a weak rapid pulse. At the commencement there was prostration of strength, with a feeling of exhaustion; and afterwards there was real debility, sometimes extending long into convalescence. In the severest forms of the disease all bodily uneasiness soon ceased, excepting that arising from the thirst and pectoral oppression: the perspiration continued excessive and became cold: the mental faculties remained clear till towards the end, when coma gradually supervening, death sometimes ensued within ten hours of the period of attack. *Vomiting and cramps were neither constant nor prominent symptoms;* but in the severe cases, no urine was passed, nor was there any bile in the evacuations till reaction ensued.

"When the disease took a favorable turn, the pulse became more full and slow; the burning heat at the epigastrium, and the precordial oppression diminished; some dark-green feculent matter was passed by stool; a little urine was secreted; and the patient slept. If the case did not proceed at once to

* Madras Quarterly Journal, vol. i. p. 224, &c.

convalescence, the pulse did not become natural, the pupils remained sluggish, there was anxiety, and the skin continued muddy and strongly perspiring.

"After a remission of twenty-four or forty-eight hours, sometimes anticipating by two hours, the same train of symptoms was apt to be renewed. The skin became dry at first and sometimes hot; the burning sensation in the epigastrium recurred, followed by two or three watery nauseous stools, and great exhaustion of the strength; and although the skin became cold, the perspiration increased. There was occasionally wandering of the mind, but extreme collapse, with a state approaching to coma was more common; and these increased after each periodic exacerbation or paroxysm, if the case was proceeding unfavorably." (Madras Quarterly Journal, vol. ii. pp. 80-1.)

There were never any cramps after the first attack, and vomiting was also less frequent. As the disease went on, remissions succeeded the exacerbations or paroxysms with a regular periodicity. When the patient was to recover, the attacks became more slight, and sometimes convalescence was rapid without leaving any organic derangement; but when the disease was of a dangerous character, the collapsed and comatous states were more prolonged after each exacerbation, and sometimes the patient never rallied after they came on.

The blood was found very liquid when venesection was employed, and the serum muddy and mixed with the colouring matter of the red globules, and leech-bites were apt to ooze for a long time in consequence of this dissolved state of the blood. The editor of the journal contrasts this state of the blood with that observed in cholera, remarking that in the latter disease it is thick and dark, resembling treacle or tar, and quoting M. Lecanu to show that the solid matter of cholera blood is sometimes double that of the healthy proportion. In the blood, he says, of patients labouring under typhus, malignant remittent fevers, and scurvy, there is a deficiency of the solid ingredients. The appearances on dissection were a dissolved, dark state of the blood, serous effusion on the brain, and abnormal sanguineous accumulations in the thoracic and abdominal viscera; but, the author adds, the most remarkable morbid appearance was the great alteration in the blood from its healthy state. He is disposed to regard this condition of the blood as the first effects of the application of the pestilential agents, and as the cause of the suppression of the secretions. The editor demurs to this conclusion, and considers that the first action of the poison is on the apparatus of innervation. For our own parts, we think the author's theory *at least* as good as the editor's, and that, therefore, according to a well-known rule, it ought to have been left undisturbed.

The treatment of this formidable disease is discussed by the author with much diffidence, and with a degree of judgment which, we would not say renders the former quality unbecoming, but which shows, at least, that a diffident tone is no index of demerit. He speaks with much doubt of general bleeding, and says, that when had recourse to in the stage of collapse to relieve congestion, diffusible stimulants and tonics, with mild nutrients, require to be employed at the same time, to rouse the vital functions, excite the heart's action, support the strength, and regenerate the blood. With regard to these mixed proceedings of (what we consider) antagonist measures, of which we saw something from the hands of Indian practitioners in cholera, and of which we have heard much more, we do not hesitate to declare, that our observation, so far as

it extends, confirms what our reason has told us, that the respective portions of the treatment being appropriate to opposite conditions of the system, when they are simultaneously employed, one at least of them is improper, and often does more mischief than the other can counterbalance. In the early stage of our cholera experience, when we regarded ourselves as little more than the pupils of Indian practitioners, we saw patients sink to rise no more under bleeding, from which, we had been told, marvels would be accomplished in collapse, provided a flow of bright blood could be obtained. We never, however, saw the bright blood in such cases, but we saw an increase of collapse against which stimulants were powerless. During the stage of reaction, leeches were, during the prevalent sickness, very properly applied to the nape of the neck or temples, when the head was much affected; over the region of the heart when there was much oppression there; to the right or left hypochondrium when the spleen or liver was enlarged; but, the writer adds, in several instances, the symptoms on account of which they were applied, disappeared so rapidly after a trifling abstraction of blood, that the utility and necessity of this particular agent was often doubtful, more especially as favorable results frequently ensued where it was not employed. That applied externally by bottles of hot water, and internally in the form of the hot saline enemata, already mentioned, was a powerful agent in supporting the heart's action. Wine given in small quantities with arrow-root, or effervescing draughts, appeared to support the strength under exhausting perspiration. Counter-irritants were useful when the pain in the epigastrium was great and when coma supervened; and of these, nitrate of silver, blisters, and sinapisms were the best. After remission had been established, quinine was (as might be supposed) the most valuable remedy for preventing the recurrence of the primary symptoms and moderating their effects.

Fever. Mr. Martin remarks,* "that it cannot be too much impressed on the Indian surgeon, that it is on his careful attention to the phenomena of fever, that nine tenths of his usefulness depend;" and certainly all the writers before us show by the accuracy of their descriptions that their own labours have been influenced by this important principle. We should consider ourselves as deviating from the purpose of this article, which is rather to touch salient points than to furnish an analysis of the voluminous works we are dealing with, were we to do much more than impress on our readers, and particularly on students, who may have a prospect of being engaged in the eastern hemisphere, the great extent, and, we would add too, the accuracy of the information regarding the general features of the endemic fever of India, to be found in the pages of Dr. Johnson and Messrs. Martin and Annesley, and the insight which the regimental Reports, published in the Transactions and Journals, afford into the varieties of this staple disease; and, consequently refer them to these works, as preparatory to that experience, the fruits of which, however hardly earned and slowly gathered, constitute the only substantial and available knowledge a medical man is ever doomed to possess.

One document, however, in reference to the treatment of remittent fever which Mr. Martin has taken the trouble to compile, we consider so

* Johnson and Martin, page 125.

valuable, that nothing but want of room prevents us from quoting it, and commenting upon it at large. He has condensed into one view the practice recommended in this disease, whether existing in the East Indies or other warm regions, by various authorities for two centuries. His authorities are arranged in chronological order, and stand thus: 1629, Bontius; 1751, Cleghorn; 1757, Bogue; 1757, Huxham; 1760, Huck; 1768, Pringle; 1790, Balfour; 1795, Chisholm; 1797, Clark; 1799, Blane; 1808, Dr. Robert Jackson; 1810, W. Ferguson, inspector-general; 1811, Bancroft; 1813, Dr. James Johnson; 1816, Sir W. Burnett; 1818, Ballingal; 1819, Dickenson; 1827, Geddes; 1828, Annesley; 1832, Mr. Twining; 1833, Dr. Joseph Brown, in Cyclopædia of Practical Medicine, and, 1835, Dr. Copland, in Dictionary of Practical Medicine. The remedies recommended by all these authorities are stated by Mr. Martin, and, with the exception of those writing towards the close of the last century, it is striking how great is the accordance among them. Excepting Balfour, Chisholm, and Clark, who wrote during the last ten years of the 18th century, all recommended bleeding. The cause of the exceptions is manifest enough; the medical world was then under the sway of the absurd Brunonian reveries, and debility, direct or indirect, daunted the imaginations of all practitioners. Good sense, however, speedily resumed the rule, and between the practice of the earlier writers, from Bontius to Pringle, and those within the 19th century, the difference is in detail, not in principle. There is some difference in the view with which mercury is given, some purposing to affect the system by it; others merely looking to its purgative effects; some give bark during the remissions, others omit it; but the general antiphlogistic and evacuating plan is that recommended by all, with the exceptions stated.

DISEASES OF THE LIVER. These occupy of course a large space in these volumes. The reasons which we have assigned for our cursory view of the subject of fever must equally prevent our traversing the whole of the present ground with our authorities. "Deep-seated or suppurative inflammation of the organ," is the form of its disease of which the diagnosis is most difficult. Mr. Martin presents us with the following description of the symptoms of this form:

"The disease is sometimes preceded by a perceptible falling off in the general health, such as emaciation, dry cough, and embarrassed respiration, loss of appetite, with a muddy or sallow complexion; but it more generally comes on in the midst of apparent health. We seldom, indeed, see the patient till inflammation has actually commenced; when there is generally present a feeling of abdominal uneasiness, but more particularly of the epigastric region, and that of the liver, with some degree of fever, preceded by slight rigor or ague; but all these are so trifling as too often to attract little of the patient's attention. Perhaps he applies to his physician on account of diarrhœa, supposed to be the result of error in diet; medicine affords some relief, and he proceeds in his ordinary occupations for days, or, when the action is more chronic for weeks, though under great depression of the mental and corporeal energies; till at length his altered appearance — hacking cough — permanently dry skin — invincibly rough furred tongue, and morbid taste; all expressive of a depressed and depraved state of the secretions and excretions, attract some more serious notice on his own part, or that of his family. The real nature of the disease may still remain a secret to both patient and physician, and it may not be till actual tumour of the liver, a marked succession of rigors, or profuse and clammy sweats announce in *audible* terms the formation of abscess, that either party becomes

awake to the impending danger, and then it is too late. A sense of uneasiness amounting to dull pain, weight and oppression may or may not exist in the region of the liver, according as the disease is seated more or less deep in its substance or in its upper convex surface; when the former exists, the symptoms are more than usually obscure and insidious; in the latter they are acute." (Johnson and Martin, pp. 277-8.)

With regard to another symptom supposed by other authorities to be of some importance, Mr. Martin remarks, that Mr. Twining *fancied* that "a greater degree of tension of the right rectus abdominis muscle than of the left," formed "one of the most undeviating symptoms of congestion with incipient interstitial deposit into the texture of the liver, which generally goes on to deep-seated abscess." Mr. Martin argues, "that the mere tension of a muscle can prove an 'undeviating symptom' of any peculiar morbid change in a gland beneath it, cannot be admitted in any case." We would remark on this, that the late very able and excellent Mr. Twining did not, in the present instance, express the opinion that the tension of the muscle was an absolutely undeviating symptom of the affection, but that it was one of the symptoms which were the most so. In truth, in suppurative inflammation of the parenchyma of the liver, in which we have little or no pain, and there are not one or two decisive phenomena to guide us in our diagnosis, we attain to our conclusion from an assemblage of circumstances, each in itself of little weight, but constituting in their union, if not conclusive, strong presumptive evidence, and of this assemblage, the tension of the right *rectus abdominis*, we have found, even from observation in this country, as important as any. We find Dr. Maclean, too, in reporting a case of hepatic abscess explored and punctured, in the 2d volume of Madras Reports, page 232, quoting this symptom, "which Mr. Twining gives as a characteristic symptom of central abscess of the liver," as one of his reasons for the proceedings he adopted, exploring and puncturing the liver. The result was, the discharge of eight or nine ounces of thick, curdy pus.

We find that the exploratory needle is now extensively used in India, in supposed cases of hepatic abscess, having been first applied to this purpose by Dr. Mouat. The very able inspector of hospitals at Madras, Dr. Murray, seems to be exerting himself, and very successfully, in leading the medical staff there to decisive proceedings, in cases where there are good grounds for believing that abscess of the liver exists. From circumstances connected with the case already adverted to, that treated by Dr. Maclean, he is led to the conclusions, that danger need not be apprehended from pushing a trocar into the parenchymatous substance of the liver, and that such punctures are the means of causing adhesion between the liver and abdominal parietes. In his labour to surmount the reluctance of medical practitioners to explore enlarged livers, he remarks that a "*deterring*" story is told here of a patient once dying from hemorrhage in consequence of a trocar having been pushed into his liver; but he (Dr. Maclean) can call to mind seventeen cases within the last four years, wherein he performed this operation without any bad consequences; by which means, six of the number recovered. In continuation, he remarks, that with a good anatomical knowledge of the region in our mind's eye, to enable us to avoid the large hepatic vessels, the gall-bladder, the colon, and the stomach, there is abundance of evidence to authorise us, nay to render it our bounden duty, to explore the liver, without hesi-

tation or delay, in most cases where pathognomonic symptoms of abscess in it exist, and the disease is interfering seriously and prejudicially with the functions of the organ, and the general health of the patient. Dr. Murray gives the following rules, on which we should place confidence, being convinced that they are the result of experience, for exploring and puncturing the liver. All our punctures, he thinks, should be made from the abdominal cavity, entering the trocar or explorer under the edge of the cartilages of the seventh, eighth, or ninth ribs, as circumstances may indicate. We may often get nearer the abscess through one of the intercostal spaces; and primary exploration may sometimes be advantageously made in this situation, by a very flat canular instrument; but from patients not having recovered when the matter was evacuated through the diaphragm; from the fibres of the diaphragm impeding the exit of the matter like a valve; from observing that air sometimes enters the wound when made here, and from the opening not being so dependent when made through the intercostal spaces as through the abdominal parietes, he is induced to prefer the latter mode in all cases. He prefers a long flat trocar for the performance of the operation.*

In corroboration of the value of a long trocar, surgeon Wilkins, of H. M. 41st regiment, relates a case of great interest, which will be found at page 479 of the first volume of the Madras Journal. In this case, two punctures had been made with a trocar in the intercostal spaces to no great depth. There was some effusion of blood, with a degree of relief, but no permanent benefit; no pus was discharged. Mr. Wilkins feeling a conviction that the common trocar was too short, on the 5th of April introduced that employed for puncturing the bladder by the rectum, which being curved and larger than the other, reached the abscess, and gave vent to four ounces of sanious purulent matter, to the great relief of the patient. On the 11th of the same month, the long trocar was again introduced, as the discharge had stopped; the punctures were kept open by tents; the discharge soon became healthy pus, which gradually lessened in quantity, till it finally ceased on the 10th of May, and the wounds soon healed. The patient was restored to perfect health.

Mr. Martin has employed very commendable pains in illustrating the relative frequency of liver disease in different districts. Prior to his investigations, this class of complaints was supposed to be very infrequent in Bengal; but his researches prove the fallacy of this supposition. He has received in his researches the very able assistance of Major Tulloch, to whom he acknowledges his obligations for a very valuable table on the subject, published in page 282 of his, and Dr. Johnson's work. From this valuable document, we find that, in the Windward and Leeward Command in the West Indies, of the average strength $44\frac{1}{2}$ were attacked with inflammation of the liver and jaundice, of whom died 1 in 12; and that in Jamaica of the garrison $95\frac{3}{5}$, of which was fatal 1 in 11, were attacked. When we turn to the eastern world, we observe, that in Madras the proportion attacked was 1 in 9 nearly, of which was fatal 1 in $17\frac{3}{4}$; in Bengal the proportion attacked was 1 in $15\frac{5}{6}$, of whom died 1 in 14; whilst in Bombay, the numbers attacked were 1 in $16\frac{1}{2}$, in which the fatality was 1 in $17\frac{1}{2}$.

From this table it appears that the fatality from a given number of cases

* Madras Journal, vol. ii. pp. 237-9. We learn with much regret, since this article was written, that Dr. Murray has since died in India.—Ed.

of liver disease is greater in the western than the eastern hemisphere; but that the proportion attacked with the disease is very much greater indeed in the latter than in the former locality. We know nothing of the cause of this great discrepancy, nor of that existing between the Windward and Leeward Command and Jamaica, where, it will be observed, not half the number are attacked that suffer in the former station. It must be manifest that difference of temperature will not explain it; neither will it explain the following singular anomalies pointed out by Mr. Martin: The deaths by hepatic diseases among the European troops in garrison at Fort William are stated in the returns furnished on the spot at 1 in 18, while at Chinsurah, but eighteen miles distant, they are 1 in 7; at Berhampore 1 in 9; at Winapore 1 in 6; and lastly, in the General Hospital, Calcutta, 1 in 9. Mr. Martin suspects there may be some error in the estimate for Fort William, and the difference between this and the other stations mentioned is so great, there seems some ground for the suspicion.

Chronic enlargement of the liver meets an ample and well-merited share of attention from our authors. The opinion expressed long ago by Dr. Johnson, that not 1 in 10 of those who are supposed to labour under chronic liver disease have any organic affection of that viscus, received, it is well-known, an ample confirmation from the dissections performed at Hilsea Barracks by Dr. Knox, from which it resulted that of from 40 to 60 bodies of persons supposed to be labouring under hepatities or hepatic dysentery, in 2 only were there any traces of organic disease of the liver. The opinion expressed by Dr. Johnson would naturally point to him as a very suitable instructor in disorders which simulate actual disease in the liver, and a very able chapter has he written on this subject, for which we refer our readers to the original. Actual chronic disease does, however, frequently exist, either as the result of previous inflammatory states, or congestion of the organ, or as the sequel of intermittent or remittent fever. The following is Mr. Martin's description of the symptoms:

"The liver is generally enlarged in a perceptible manner; its function is greatly impaired, the biliary secretion being scanty and depraved; that of the kidneys is similarly affected; there is frequently a hacking dry cough, dyspepsia is various, and general ill health; sometimes a cachectic state with a sallow pasty complexion, and emaciation. The mind is despondent." (Johnson and Martin, p. 283.)

This is often an unmanageable disease. Mr. Martin believes mercury injurious, for it injures the stomach and bowels, without exciting secretion from the liver; and drastic purgatives are equally pernicious. His favorite remedy is the nitro-muriatic bath steadily persevered in for a month or six weeks at a time. Mr. Annesley entertains the same opinion of the value of this remedy after due depletion. He recommends that whether chronic inflammation continues as a consequence of the active form of hepatitis, or takes place primarily, local depletion should be practised, according to the state of the pulse and appearance of the tongue, and the habit and constitution of the patient. Simultaneously with such vascular depletion, the state of the biliary and intestinal discharges should be corrected by suitable purgatives, such, in the first instance, as calomel at bedtime followed by some saline aperients in the morning, and subsequently by the milder mercurials, blue pill or mercury with chalk, and a

morning aperient. After the employment of these remedies, he would, equally with Mr. Martin, resort to the nitro-muriatic bath.

The following is the receipt for the preparation of the bath, and the mode of its employment recommended by Mr. Martin:

"Two gallons of water (about ten bottles) suffice for a bath. To each gallon of water, add 3 ounces of the dilute nitro-muriatic acid by measure. The bath thus prepared will keep in use for three days, by adding half an ounce of dilute acid and a pint of water, morning and evening, in order to make up for the waste by evaporation, a portion only of the bath is to be heated for use, after which it is to be added to the remainder, so as to make the whole of a comfortable warmth. Let both feet be placed in the bath, while the inside of the legs and thighs, the right side (over the liver,) and the inside of both arms are sponged alternately: this should be continued for ten or fifteen minutes morning and evening. Whilst using the bath, a gentle aperient such as Cheltenham salts, or Epsom salts in some bitter infusion, should be taken every other morning. Earthen or wooden vessels should be preferred as foot-baths, and all the sponges and towels to be kept in cold water, as the acid corrodes them." (Johnson and Martin, p. 286.)

A case is given illustrative of the beneficial effect of this remedy in the words of the patient, not in those of Mr. Martin, under whose care he was treated. It is so valuable that we give it a place here:

"In November, 1829, I arrived in Calcutta, suffering from the consequences of a jungle fever contracted at Chittagong; my liver and spleen were perceptibly enlarged, my limbs were much swollen and so stiff that I could with difficulty walk, and the least exercise occasioned vomiting. Before my arrival at the Presidency, I had for months taken medicine; this plan was altered, and I was put through a course of the nitric-acid bath, taking a vapour-bath every other day. The nitric-acid bath acted in a few days very powerfully immediately on using it; and in about three weeks both the liver and spleen could no longer be felt, nor did pressure give me much uneasiness; the stiffness too disappeared, and my skin became less tense and dry. I took an aperient draught once or twice a week, and nothing else but the bath. I left Calcutta towards the end of December, and had little or no occasion for medicine for two years afterwards, my general health being completely restored." (Ibid. p. 284.)

Disease of the spleen. This affection forms an important object of attention to the tropical physician, and we do not regard it as so rare in this country as to merit neglect from him who stays at home. The subject is carefully and judiciously treated in both the systematic works before us. As a general rule, it arises from the same cause as intermittent and remittent fever, and more frequently in conjunction with one or the other of these fevers, or as a sequel of them than as a primary disease, though we have witnessed cases in this country unpreceded by fever of any kind, and under circumstances which appeared to exclude the idea of a malarious origin. It may exist either in an acute form with manifest indications of inflammation, or in that of chronic enlargement. How far the latter condition may arise independently of the former may be questioned; but, for our own parts, we would say that we have observed, even in this country, a state of chronic enlargement of the organ unpreceded by an inflammatory condition, and conversely we have seen this latter state subdued by appropriate treatment without the former ensuing.

The following is the result of Mr. Annesley's researches into the pathological condition of the organ.

"1. Enlargements of this viscus. The enlargements sometimes are to a very great extent, the spleen weighing ten or twelve pounds, and yet no sensible

alteration can be detected in its substance by the unassisted eye. Frequently, however, its structure is at the same time much changed, its colour being much deeper, its consistence greatly diminished and rendered more friable, so as scarcely to admit of examination without falling to pieces. Its external membrane is also often torn with ease: sometimes it is thickened, more vascular, and occasionally cartilaginous in parts. 2. It is in some cases ossified in various places, and in others covered with large patches of coagulable lymph and albuminous concretions. In such cases, it frequently adheres to the adjoining surfaces and viscera. 3. Its internal structure frequently contains purulent collections, sometimes apparently unencysted, and flowing through its substance; at others, inclosed in one or more distinct cysts. It is also subject to tubercular formations, and to hydatids. 4. The spleen is sometimes found smaller than natural, and dry and shrivelled; but this is comparatively a rare occurrence in warm climates. 5. Instances have occurred wherein it has been ruptured from the congestion of blood to which it has been subject in the cold stage of an ague. And, 6th, its internal substance has been found reduced to a grumous and pultaceous mass." (Annesley, pp. 312-13.)

It will be understood that the treatment of the acute affection will be governed by different principles from that of chronic. In the former we are advised to employ bleeding, general or local, purgatives and sudorifics. To these remedies, adopted by Mr. Martin, Mr. Annesley would add mercurial purgatives, a mode of proceeding which has incurred some censure, it being observed that the peculiar cachectic condition of the system with which the chronic form of the affection is associated, supports ill this remedy. It is perfectly true that nothing could be considered more pernicious than the effect of mercury on the pallid and sanious state associated with non-inflammatory spleen disease; but in the acute inflammatory form we have ourselves employed mercury combined with sudorifics, conjointly with local bleeding, not only without prejudice, but with the effect of curing the patient.

The appearance of one labouring under chronic disease of the spleen is concisely and graphically drawn by Mr. Martin, when he says, "the complexion is of a dirty lemon colour, the countenance being puffed and bloated; the eye full, and of a peculiar clearness; the lips and tongue blanched and bloodless; in short we have a concentration of the cachexia of systematic writers." (p. 297.) This state, resembling the anemious condition induced by hemorrhage, and existing in chlorosis, on which we observed on a former occasion the spleen was very generally affected,* is what we ever find associated with chronic affections of the same organ in this country,—a state so naturally suggesting the tonic and astringent plan of treatment, that such a one has been adopted from the days of Celsus, when "*incoctum absinthium*" was the remedy administered in the morning, and "*aqua à ferrario fabro, in quâ condens ferrum subinde tinctum sit,*" was the post-prandial potion, to the present time, when Shoolbred's powder, a combination of purgatives with sulphate of iron is the universal nostrum in Calcutta for the disease. Mr. Annesley, besides the employment of purgatives with tonics, suggests the internal administration of nitric acid, and the application of the nitro-muriatic lotion over the region of the spleen. Mr. Martin finding that, when muco-intestinal irritation is present with a hectic form of fever, the spleen medicines in common use inadmissible, recommends a combination of tincture of muriate of iron and tincture of iodine in equal parts, of which ten drops are

* See British and Foreign Med. Rev., vol. III. p. 346.

given three times a day, the spleen being at the same time rubbed with croton oil. When the tincture is found to disagree, he recommends pills of the iodide of lead according to the following form :

℞ Plumbi iodidi ʒss.
Confectionis rosæ q.s.s. Divide in pilulas cxliv.

Of these pills one is given night and morning, increasing the number gradually.

We have brought our review of these valuable works to a close. Our estimate of their worth has been so clearly indicated in the course of this article, that to enlarge on their very great merits here would be superfluous. To the two systematic works, at least, the seal of public approbation being already affixed, they can require no commendation from us. We will only say that Dr. Johnson's volume, always excellent, has been much improved by himself in the present edition; while the numerous important additions made to it by Mr. Martin have greatly enhanced its value as a guide to the tropical practitioner. We must take this opportunity also of bearing testimony to the merits of the different Indian journals whose titles we have prefixed to this article. Of the Madras Journal, more especially, from which we have derived much information, we must speak in high terms. The spirit, intelligence, and method displayed in it are equally creditable to the editor and the contributors; and we wish it the ample success to which these high qualities entitle it.

ART. IV.

1. *De l'Opération de l'Empyème.* Par M. C. SEDILLOT, Chirurgien-major, Professeur à l'Hôpital du Val de Grace, &c.—*Paris*, 1841. 8vo, pp. 181.

On the Operation for Empyema. By M. C. SEDILLOT, Surgeon to and Professor at the Val de Grace Hospital, &c.—*Paris*, 1841.

2. *Notes on the Treatment of Chronic Pleurisy, with Effusion.* By the late JAMES HOPE, M.D.—*London*, 1841. 8vo, pp. 8. (*From the Medico-Chirurgical Review*, No. LXIX.)

3. *The Article "Empyema."* By Dr. WALSHE. (*Cyclopædia of Practical Surgery*, Nos. IX-X.)—*London*, 1841. 8vo.

THESE essays were produced with different objects: M. Sédillot undertakes simply to canvass the merits of, and establish the best mode of performing the operation for empyema; Dr. Hope, to describe such a medical treatment as shall make the operation unnecessary; Dr. Walshe, to supply a complete history of empyema, as far as the arrangement of the work for which he has written permits this.

These writers use the term empyema in the practical, and not in the etymological sense; understanding by it, to use the words of one of them (Dr. Walshe), "every fluid pleuritic collection, whether purulent, puriform, albumino-serous, or otherwise, which runs a manifestly chronic course, and continues stationary, or increases in spite of remedial measures." To us this appears perfectly in accordance with necessity; so long as the state of knowledge continues such, that the nature of the liquid cannot during life be ascertained, the word can only be used thus, if it be used at all. "The term," observes Dr. Walshe, "is evidently an

incorrect one; but as its conventional meaning is generally understood, there is perhaps no adequate motive for changing it." From the inability just referred to it follows that all attempts to describe empyema without reference to pleurisy, tending as they must to generate the notion that it commonly arises as a perfectly independent disease, must give the student a false idea of its pathology. By briefly but carefully tracing the history of pleuritis, Dr. Walshe has given a degree of precision to the subject of empyema which, as it is usually handled in surgical works, it signally wants. We shall, however, not enter into this part of the subject here, as we are desirous of confining ourselves as much as possible to the consideration of empyema practically. Having shortly noticed the statements in one of the productions before us respecting the mode of increase of effusions into the pleura, and borrowed an extract from its section on the diagnosis of those affections, we shall pass to the subject of treatment.

Dr. Walshe divides the stage of effusion into three sub-stages; those of laminar effusion, gravitating effusion, and effusion with dilatation of the chest and "*detrusion*" of the surrounding parts. We confess that on first view this appeared to us a piece of hyperdivision, but upon enquiring into the grounds of the arrangement, we found not only that it is perfectly warranted by observed facts, but is one involving practical considerations of no mean importance.

"While the liquid accumulated," observes the author, "is moderate in quantity, this is found (where the physical principles carefully considered by M. Woillez would prepare us to find it) equally spread over the entire pulmonary surface (laminar effusion). This disposition of the fluid will continue so long as the aspiration of the lung exercises a more effectual influence upon the position of the fluid, than its own gravity. With the continuance of effusion the force of gravity becomes predominant and the fluid accumulates at the most depending part of the chest (gravitating effusion). The duration of the first stage is of course mainly regulated by the activity of effusion; but is also to a less degree affected by the degree of elastic contractility of the lung."

While a thin structure of fluid of equal or very nearly equal thickness in all directions is spread over the entire surface, the sound on percussion is less clear than natural, but is not completely dull: the loss of sonorousness is proportionably equal in all parts of the surface; there is, therefore, no precise limitation between a dull and a clear sounding part; nor are the position or other characters of the dull sound capable of being altered by changing the position of the patient. This form of effusion is not, we believe, habitually recognized by writers, but we believe we have seen cases which gave the warranty of experience to what appears on physical grounds so fairly admissible. These cases were of the kind alluded to by Dr. Walshe in the following passage:

"When liquid has collected in sufficient abundance to overcome by its gravity the other physical force acting upon it, the signs change. The upper part of the chest recovers in a great measure or even completely its normal sonorousness: hence a diminution of the extent over which dulness is perceptible actually announces increase of the disease. Though rare, we have observed a few examples of this occurrence; practically it is of much importance, for it might easily betray the observer into a belief that absorption had commenced. The inferior part of the chest of course sounds duller than before; but, at first, this increase is not strongly marked. The dull sound is now limited superiorly

by a well-defined line answering to the upper border of the effusion; and the limits of the dull sound may be changed by causing the patient to assume different positions, inasmuch as the lung floats on the surface of the fluid, while this collects in whatever part of the chest the changing position of the patient renders the most dependant."

At length fluid accumulates to such extent as to destroy the elasticity of the lung completely, the organ is incapable of further retreat before the increasing effusion, consequently this acts on the walls of the chest and the surrounding soft parts; we have now the stage of effusion with dilatation and "*detrusion*" of organs. This being the most common condition of things in empyema is dwelt upon particularly by Dr. Walshe in respect of its physical signs; and certainly with the abundance of means of information here exhibited, to guide us in our diagnosis, error would appear to be hardly venial.

One of the most important points connected with the history of empyema in the stage of absorption with contraction, is the position of the heart. The following different conditions have been observed: 1. The organ recovers its normal position, or the immediate vicinity of this. 2. In certain cases of empyema of the right side it is drawn during the progress of absorption into the right division of the thorax, (Stokes, Williams). 3. The heart on account, it is presumed, of loss of tone on the part of the mediastum, acquires a certain share of mobility, and falls to the right when the patient lies upon or leans to that side. A single example of this state has been observed by Dr. Stokes. 4. "The heart remains in the abnormal position into which it was forced by the effusion, in consequence probably of the establishment of adhesions." A priori considerations would lead us to suppose this condition to be far from uncommon, yet we do not remember to have seen it noticed before: Dr. Walshe gives a figure of the thorax of a subject in whom he observed it.

Dr. Walshe institutes a very minute enquiry into the differential signs of empyema and cancerous accumulation in the pleura, but it is too long for extraction, and we are unwilling to abridge.

The views promulgated by Dr. Hope in the paper of which we have given the title are of a very encouraging character, as regards the possibility of curing this formidable disease. We think we cannot do better than adopt the account of his practice given by Dr. Walshe:

"Dr. Hope conceives that the great mortality which he ascribes to chronic pleurisy, in some measure depends upon the error of systematic writers, 'who mistake the state of anæmia, with its quick pulse, for irritative fever, by which they not only mislead themselves, but also their readers, as to the nature of the patient's condition, and consequently as to the appropriate means of cure.' Hence has arisen, according to Dr. Hope, a far too unfavorable impression of the curability of chronic pleurisy with effusion. He had himself been 'instrumental in curing five and thirty cases consecutively, during the space of four years; but principally two years and a half, while assistant-physician to St. George's Hospital.' The treatment under which these favorable results occurred was as follows: Dr. Hope always used mercury 'in all degrees of intensity, with opium in full proportion,' the milder and external forms when the others could not be borne, and to such extent as to produce prompt and free salivation. Blisters, with diuretics—squill, nitric æther, juniper, iodide of potassium, and, when there was no irritation of the mucous membranes, the various other preparations of potass were conjoined with the mercurial treatment. A powerful hydragogue was had recourse to, if the re-

medies now enumerated had failed, for two or three days: half a grain to a grain of elaterium, combined with calomel and capsicum to prevent nausea; or the pulv. jalap. comp., so as to produce ten or twelve copious watery evacuations per diem, stimulants being at hand in case of any sinking tendency.

"Inconvenience sometimes resulted from hypersalivation, which greatly retarded the convalescence. The action of the remedy was, however, easily controlled, by omitting it for two or three days, or by merely diminishing the dose: it did not do to suspend its use altogether. Much stress is laid by the author upon the statement, that great acceleration of pulse, with thirst, craving for cold drinks, and dry heat of skin, is not necessarily a result of fever, but *is* necessarily a result of anæmia, occasioned by the deficiency of oxygenation from the total incapacity of one lung at least. To patients thus conditioned, Dr. Hope allows at least one or two pints of concentrated beef-tea; and, if the state of the tongue and alimentary canal fully authorize it, permits them tender old mutton or beef for dinner. Even when hectic fever is established, Dr. Hope found the use of mercury still indispensable; when it had been omitted contrary to his wishes, a recurrence of the effusion has taken place, and on the resumption of mercury with opium the fluid has again disappeared. When the hectic fever is nearly removed, preparations of iron and mineral acids are given to cooperate with nourishing food in removing all remains of anæmia. These latter medicines are to be well guarded with laudanum."

Dr. Walshe recognizes three objects which should be kept steadily in view in conducting the medical treatment of empyema: 1. The prevention or controlling of febrile action. 2. The promotion of absorption. 3. The support of the general health. 1. He is an advocate for general bleeding, "if the antiphlogistic plan have not been put in force with sufficient energy during the acute stage; if febrile action, accompanied or not with local pain, exist in a subject labouring under chronic pleurisy; and if the constitutional powers appear not to be seriously depressed." But even under these circumstances he inculcates the observance of extreme caution. "An amount of depression will occasionally follow very moderate loss of blood from a vein, which may not easily be recovered from," even in subjects apparently the best suited to undergo such evacuation. Against the employment of local bleeding, either by leeching or cupping, Dr. Walshe thinks no such objections hold good, and would apply six or eight leeches to the affected side two or three times a week for say a fortnight, "and this even in cases where febrile action and local pain are almost or totally absent, provided the effusion be not of old standing," in which case he has not observed much benefit to follow local depletion. These views are not novel, but they seem to us of sufficient importance to justify their being enforced by repetition. This author thinks highly of the exhibition of calomel and opium; but would exclude it from decidedly chronic asthenic cases, and those in which the effusion is purulent: herein, if at variance with Dr. Hope, he has Professor Williams on his side.

2. Among agents promotive of absorption, Dr. Walshe appears to have particular confidence, as diuretics, in *infusion* of digitalis and iodine: we believe that the utility of the latter in these cases is more generally recognized. The following observations on the sustained use of *purgatives* are practically important:

"Purgatives should be very cautiously exhibited when the lungs are tuberculous, either because the intestinal tunics already contain tubercle, which may thereby be more speedily brought into the stage of softening, and induce ulcera-

tive destruction, with its consequences, of the mucous tunic; or because the irritation of the bowel in a subject already phthisical accelerates the deposition of tubercle there. We have seen at least one case in which uncontrollable diarrhœa, brought into existence under such circumstances, evidently hastened the patient's dissolution. On the other hand, dyspnœa, which has resisted all endeavours for its relief, may occasionally be removed or materially relieved, and this almost instantaneously, by an active hydragogue. We have observed this from the exhibition of elaterium, even where no manifest change in the thoracic physical signs followed."

Upon the importance of repeated application of blisters, Dr. Walshe forcibly insists, he is "the more anxious to state emphatically their utility in these cases; because the very justifiable incredulity as to their *therapeutical* efficacy in acute parenchymatous and membranous inflammations, now arising among the profession, might possibly be extended to their action in chronic maladies of the kind at present under consideration."

3. After some observations upon the necessity of supporting the general health in advanced cases by succulent diet, gentle tonics, and change of air, Dr. Walshe passes to the surgical treatment of the disease; and this leads us to examine the work of M. Sédillot. "The operation for empyema," says M. Sédillot, "is generally imperfectly understood, ill-performed, and ill-appreciated," a state of ignorance which he evidently conceives himself destined to put an end to altogether. "It would be an error, however, to believe," observes this modest reformer, "that we denounce *all* that has been hitherto done on the subject, and come forward to *create* the operation for empyema." Unheard of forbearance! And this, too, from a surgeon, who, if we may judge from his book, and he is not likely to have hid his light under a bushel, has never performed the operation, while it is equally plain that his 181 pages contain not one single indubitably-novel suggestion. He believes himself, however, to have all but "created the operation," because, having collected together a number of cases and fancied them to furnish motive for a certain line of conduct, he publishes the whole in a goodly octavo! But while we castigate the absurd self-complacency with which this writer magnifies his mole-hill into a mountain, we would not deny his production merit—much merit, though of a kind infinitely more humble than that wherewith himself is persuaded it abounds. In a first part is contained an examination of ancient and modern doctrines upon the operation; in a second, are printed in goodly type, each followed by sundry reflections, forty-nine reports of cases obtained from various French works, of the utility of both these parts we are quite as well persuaded as their author. In a third part, "for which the first two will have served as introduction and justification, are traced the general rules for the operation;" of the extreme value and accuracy of the doctrines laid down in this part we shall probably, as we advance, be inclined to indicate our suspicions. We shall pass over the first two parts, confining our notice of them to such references as are made requisite by our examination of the third; and this latter will only come under review in respect of empyema properly so called; to enter upon the subject of paracentesis for the relief of hydrothorax and pneumothorax would carry us beyond our limits.

M. Sédillot first enquires whether the operation is an admissible one, a query which we shall answer in the words of Dr. Walshe.

"Under these circumstances, a resource is still left in the operation of paracentesis, a procedure which, no matter how divided opinion may be respecting its general feasibility, has assuredly been sufficiently often either completely successful or productive of marked improvement, to justify its being numbered among the valuable gifts of surgery. This is a vague estimate of its utility, it may be alleged; but we fear such vagueness of expression is unavoidable. In truth, there are no existing data from which precise inferences may be drawn as to the success of this measure, whether considered generally or in reference to its performance in particular states of the constitution. And this because observers have contented themselves with merely ascertaining the existence of effusion into the pleura of subjects operated on, without enquiring into the condition of other organs, and above all, substantiating the presence or absence of pulmonary tuberculization. How can a correct general inference be obtained, when patients are clubbed together, who have simple chronic pleurisy, or this combined with carious destruction of the ribs; who have or have not serious organic disease in other regions of the body; whose lungs are sound, or the seat of active tuberculous disorganization?"

In this passage Dr. Walshe appears to us to have justly stated the difficulty of forming any precisely accurate notion of the amount of good to be effected by the operation. There are not sufficient facts on record —facts unselected, of success, and of the contrary, accurately and fully reported—to admit of the sound application of the numerical method. Now were we called upon to point out the practical question most imperatively calling for the elucidation of that method we should probably indicate the very one now before us, as being that in which all attempts at settlement based upon argument and ordinary synthetic reasoning had failed in the most irretrievably hopeless manner. Let him who doubts this, peruse the report of the ludicrous—we know no other word to describe it by—discussion which took place on the subject at the Paris Academy of Medicine in 1836; in which some of the learned academecians exhibited, by the way, such steadiness of belief and depth of conviction that before its conclusion they actually changed their opinions *in toto* on some of the most important topics mooted during the course of the debate. And the contradictory opinions maintained by the profession at Paris upon this memorable occasion had all of them their warranty in facts, ill-observed ones, no doubt, but still facts. They who would have the opening in the chest *closed* after the operation, for example, could cite their cures when such closure had been made, and gibe their adversaries with the deaths which had followed where it had been neglected; but their triumph lasted but a moment, for behold an advocate for the plan of keeping the orifice carefully *open* is upon his legs and recounts in set phrase to the puzzled auditory how such and such patients manifestly owed their recovery to that mode of treatment, and how others as assuredly had died, in whom a sufficient vent had not been established for the accumulating fluid. Now, to us, M. Sédillot appears to have done nothing more than any of these debaters: partly guided by the results of a very limited number of cases, and much more truly actuated by theoretical considerations, he advocates a certain mode of operating, forgetting that patients treated in those very manners which he strenuously reprobates, have re-

covered in equally great, perhaps proportionably greater numbers. But we anticipate.

The first point to be decided is the situation in which the opening is to be practised. The common habit of surgeons has been to operate at the most dependent and prominent spot of the antero-lateral portion of the chest, that is between the third and fourth false ribs on the left side, and between the fourth and fifth on the right. Dr. Walshe agrees with Dr. Stokes in believing that no real advantage is secured by the performance of the operation in these spaces, and that a risk is thereby incurred—no imaginary one, as numerous unfortunate occurrences of the kind on record prove—of wounding the diaphragm and abdominal viscera. The establishment of a high opening is supported by analogical reasoning. Nature, whose performance of paracentesis is generally more successful than that by the surgeon, commonly perforates the chest by ulceration in or above the fourth or fifth intercostal space. M. Cruveilhier, it appears from the statement of M. Sédillot, also inclines, on the ground of this fact, to the performance of the operation between the fourth and fifth true ribs: the latter surgeon, for reasons which appear to us of trivial importance, would open the chest inferiorly and posteriorly.

What quantity of the contained fluid is to be evacuated at the moment of the operation? enquires M. Sédillot. The query is replied to as follows: "The indication is to remove the liquid in such quantity as may be proportional to the power possessed by the surrounding organs of supplying its place." Complete evacuation he would confine to cases in which the lung is not invested by pseudo-membrane, or atrophous, and more especially to those in which the pleura is not seriously diseased: examples of hemothorax are referred to in the latter clause. There is, however, a palpable objection to partial evacuation which does not appear to have impressed M. Sédillot sufficiently strongly; little or no relief is afforded until the whole or by far the greater part of the fluid is removed: patients have been known to sink into a sate of utter despondency upon finding themselves in as much misery after as before the operation in cases where either the will of the surgeon, or some peculiarity in the condition of the pleura prevented the free egress of the entire accumulation. When this has been accomplished, a state of perfect ease, comparatively so at least, has followed almost instantaneously. The real question, however, is which plan can boast of the greater number of recoveries: Dr. Walshe states that the practice of those who empty the sac at once, as completely as possible, has been the most successful; and in this statement our own reading would lead us to concur.

The manner of regulating the flow of liquid after the first evacuation is next discussed by M. Sédillot. The views he holds upon this point appear to him of the least consequence, it may be therefore well to set down his motives for the entertainment of them. "It is impossible that adhesion can be effected between two parts which having been for a moment only approximated to each other, are kept continually asunder; hence the necessity of successively diminishing the quantity of the pleural fluid. Our object must be to favour the escape of any new matter which is secreted, and besides to remove a small portion of that left in the suppurating cavity, so as to allow this to diminish in extent

and yield to the concentric movement of the neighbouring organs." Such are the indications; but as they are beyond our reach now, according to M. Sédillot, all we have to do is to effect nearly as possible their fulfilment. "The cicatrization of the wound is to be prevented, and the opening used occasionally for the discharge of the remaining fluid, so as to obviate the risk of renewed distension; there would be no objection to allowing the fluid to ooze away gradually, *if* it were possible at the same time to prevent the entry of air into the chest." Doubtless, there would be no such objection *if* the occurrence of pneumothorax could be prevented; but it is notorious that no contrivance which had been devised until a very late period, at least for the purpose of such prevention, ever proved effectual; whether a canula invented by M. Reybard, and for which M. Sédillot appears to have conceived much affection, be destined to supply the desideratum, time must decide.* The curious point is that M. Sédillot seems to take much credit to himself for lauding a practice, of which the utility is so self-evident, that it must have been recommended (had it been considered capable of execution) by any one who reflected seriously on the subject. Dr. Walshe naturally records his approval of the plan, provided M. Reybard's instrument possess the properties assigned to it by its inventor.

This brings us to the question of the danger of pneumothorax. *Theoretically* considered, this appears far from inconsiderable; it is easy to imagine decomposition of pus, from the irritation of the pleural surface and pseudo-membranes and interference with the expansion of the lung, as being entailed by the entry of atmospheric air into the pleura, and as easy to suppose the progress of recovery seriously impeded thereby. But the truth is that *experience* by no means bears out these à priori notions, as, we are glad to observe, Dr. Walshe distinctly states; cases may be found in numbers in periodical publications and elsewhere demonstrating the innocuousness of pneumothorax, where the case has in other respects been one tending to a fortunate issue. And it is curious to note the contradictory notions upon the effects of pneumothorax to which à priori reasoning leads different observers,—an almost inevitable result in every instance where the phenomena either of health or disease are sought to be unravelled by its aid. M. Sédillot, although holding the entry of air to be in the main extremely detrimental, yet recognizes a positive advantage in its occurrence which he describes as follows: The atmospheric air having entered the pleura, "suppose the wound closed, inspiration will produce a kind of rarefaction of the fluids therein contained; but as this incipient vacuum is not filled up by air from without, it will impede the separation of the ribs, dilate the lung, prevent the depression of the diaphragm, and finally oppose the enlargement of the membranous sac lining the pleura. Now here is *an immense advantage in respect of the results of the operation.*"† On the other hand we find Dr. Williams, the importance of whose opinions upon such

* For an account of this canula, see Br. and For. Med. Rev., vol. XII., p. 251.

† The introduction of air into the chest of animals, provided it be not frequently repeated, appears from the results of M. Barthélemy's experiments, referred to by Dr. Walshe, to be perfectly harmless. The animals experimented on were, however, it must be remembered, healthy.

questions none will dispute, maintaining that "when air gets access, it tends to do mischief, whether the orifice remain open or closed; in the former case the air passing in and out prevents the lung from expanding, and constantly irritates the serous membranes; and if it be closed, the air admitted tends to engender more air by the decomposition which it causes in the remaining liquid, so that the pleura soon becomes as much distended as before the operation," (Lect. on Diseases of the Chest, No. xvii., Medical Gazette.) Who will not agree with us in recognizing the futility of argumentation, no matter how acute, if unsupported by extensive experimental evidence, while he has before him such illustrations of its results as that we now afford?

M. Sédillot next examines the subject of injections, dividing these into three classes, the diluent, the "modifying," and the oleo-vinous; we venture so to name the latter class as we confess ourselves unable to supply the author's omission of a title significative of the presumed mode of action of agents belonging thereto. The use of diluent injections, of which warm water is the best, is useful for the removal of pus of bad quality; but we cannot agree with M. Sédillot in his advocacy of the employment of "aromatic infusions, decoction of bark, tincture of aloes, nitrate of silver," for the purpose of altering the character of the suppurating surface, and believe Dr. Walshe's objections to such remedies, on the score of the want of all evidence from experience in their favour, justly urged. Respecting the third class M. Sédillot must speak for himself. "These injections," he says, "composed of a mixture of oil and wine, were according to the precepts of the Greek school, allowed to remain in the chest, and changed every twelve hours." [How could this be done without renewing the air in the pleura, a renewal which M. Sédillot pronounces to be so mischievous?] "They certainly deserve to be employed by surgeons of the present age, at the time recommended by the ancients, that is on the tenth day of the operation; for I have quoted cases which would appear to prove that a particular change does really occur at that period; and oil and wine forming a mild and gently exciting liquid, *might* beneficially modify the state of the parts." So much for oil and wine.

If we have exhibited any acerbity in our notice of M. Sédillot's book, this has been forced upon us by the egotism pervading his pages; there are certain styles of writing which would put the least irascible critic in the world out of temper, and M. Sédillot's is thus unfortunately characterized. There is, however, much in the volume besides the reprint of cases it contains, rendering it worthy of perusal, and we regret we are prevented from making some other of his dogmata, at least, the text for discussing the questions to which they refer. Dr. Hope's views seem to have been one-sided and imperfectly established, where they were found to have been old, and where new to have been deficient in solidity.

The detail with which we have noticed the essay of Dr. Walshe, is sufficient evidence of the estimation in which we hold that gentleman's production.

Art. V.

1. *A Treatise on the Nature, Causes, and Treatment of Erysipelas.* By Thomas Nunneley, Lecturer on Anatomy, Physiology, and Pathology in the Leeds' School of Medicine, &c.—*London*, (1841?) 8vo, pp. 307.
2. *Article, Erysipelas.* By J. C. Donellan, M.D. (*The Cyclopædia of Practical Surgery*, Part X. October, 1841.)

It is, as Mr. Nunneley observes, no doubt a "singular circumstance," that when distinct and even voluminous works have appeared on almost every disease to which the human body is liable, no separate treatise should have been devoted to a consideration of the Nature, Causes, and Treatment of Erysipelas. Although, however, we have had no distinct monograph on the subject, it has by no means been neglected by medical and surgical writers in various periodical publications and systematic works. Mr. Nunneley is willing to admit that many of these essays are the able productions of able writers; but something he thinks is yet wanting which may be comprised in a work devoted expressly to the disease. It is scarcely necessary we should remark that there is no subject of practical importance upon which there has existed more contrariety of opinion, than upon that of erysipelas, even among the best and most experienced observers. Almost every writer has some peculiar views as to the nature of the disease. But few coincide as to the treatment it requires, and "scarcely any two have agreed as to the precise signification or extent of the word, or what diseases should be included under the term." In proof of this we refer to the various definitions and subdivisions of erysipelas quoted by Mr. Nunneley from different nosological authorities. Some have supposed that erysipelas is a specific disease, having clearly-defined characters, and that the cutaneous affection is merely the effect of a salutary effort of nature to relieve herself of some morbific matter; others, on the contrary, have disregarded the constitutional symptoms, or supposed them to be dependent upon the inflamed condition of the skin. Vogel appears to have been one of the first to discriminate between the local affection and the constitutional disorder; a distinction which probably suggested to Cullen his further separation between erythema and erysipelas; the former of which he places among the phlegmasiæ, the latter among the exanthemata. "Cutaneous inflammations are of two kinds, commonly distinguished by the names phlegmon and erysipelas. Of the latter there are two cases which ought to be distinguished by different appellations. When the disease is an affection of the skin alone, and very little of the whole system, or when the affection of the system is only symptomatical of the external inflammation, I shall give the disease the name of erythema; but when the external inflammation is an exanthema, and symptomatical of an affection of the whole system, I shall then name the disease erysipelas."* How far these distinctions which have been made between erythema and erysipelas are well founded, Mr. Nunneley regards as at least doubtful; and we think his hesitation to admit them is well founded. If, for example, we take the symptoms mentioned as characteristic of erythema,† and compare them with those of erysipelas, we find them so

* First Lines of the Practice of Physic, vol. i.

† Vide Nunneley's Introduction, and also the works of Willan, Bateman, Parr, Good, Rayer, &c.

merging into each other, that the impropriety of the artificial distinction becomes apparent. In many cases the same disorder which by one writer has been treated of as erythema, by another has been considered to be erysipelas. This discrepancy Mr. Nunneley very fairly urges, would in itself be sufficient to excite strong suspicion of the two being identical; and accordingly we find that some few writers have not only maintained the sameness of the two, but have also included disorders of many other parts under the same head. Into the accuracy of this view of the subject Mr. Nunneley enquires at some length. He first succinctly, and for the student instructively, points out the original difference that must be admitted to exist in the constitutions of different persons, by which they are more or less prone to particular diseases, or to disorders of particular organs or tissues; and besides, that when two persons, who are thus constitutionally different, are affected with the same kind of disease, this difference of temperament will induce considerable modifications in the symptoms, and render variation in the treatment necessary.

"Injuries of precisely the same nature, and in the same situation, which in one person shall induce a limited local action,—phlegmon, either without much constitutional disturbance, or if attended by general symptoms, they will be such as are indicative of power, in which depletants are not only borne, but are highly necessary,—shall in another person, or even in the same at another time, induce a local action in which there is considerable tendency to spread, far and wide, diffuse inflammation, or erysipelas, in which the constitutional symptoms are those of great action with little power, and where depletants are not only not indicated but are positively injurious. Farther, that these different states may arise without external injury, in which the local action may be exhibited upon the surface of the body, or be thrown upon an internal membrane, according as there may be some peculiar determinating cause in the part itself, or elsewhere." (p. 21.)

In the opinion of many writers erysipelas is essentially a specific disease, affecting one tissue alone, characterized by the local disorder, which forms the chief symptom, and upon which the constitutional disturbance depends. This view is quite opposed to that which Mr. Nunneley endeavours to establish, in which the character of the local changes is supposed to depend upon the constitutional peculiarity, rather than upon the organization of the part. No one has more strenuously supported the idea of erysipelas being an inflammation of the skin, or of this and the subjacent cellular membrane, than Mr. Lawrence,* and to his paper Mr. Nunneley chiefly refers in endeavouring to refute this opinion. His critical examination of Mr. Lawrence's views appears to us fair and satisfactory. So far from admitting the propriety or accuracy of confining the term erysipelas to an affection of the skin alone, or even of the skin and subcutaneous cellular membrane, Mr. Nunneley would extend its application as a generic term to the following diseases, which he thinks are naturally grouped together: Erythema; erysipelas, in the forms described under the term, whether of the head and face, trunk or extremities, idiopathic or sympathetic; diffuse inflammation of the cellular membrane of Duncan; puerperal fever; diffuse inflammation of the serous membranes; diffuse inflammation of the mucous membrane; "possibly" some forms of arachnitis; diffuse phlebitis, and also this form of inflammation of the

* Med. Chir. Trans., vol. xiv.

absorbents. Mr. Nunneley expresses his gratification at finding that since his treatise was written, the view which he takes of the nature of erysipelas has in most respects been confirmed by so able a writer as Dr. Alison.* Dr. Donellan, on the other hand, in his article on erysipelas, after referring to various pathological opinions, would limit the term as it has been by Lawrence and others.

"In fine," he says, "until a distinctive symptomatology and special anatomical characters shall have been assigned to internal erysipelas; we should avoid rendering the question more complex, and we shall therefore consider the skin to be the exclusive seat of erysipelas." (p. 144.)

We confess that, after an attentive perusal of Mr. Nunneley's remarks upon the different affections just enumerated, and which he would introduce into the family of erysipelas, we cannot refrain from admitting the very strong presumptive evidence, at least, which he affords, of the propriety of giving to the term a wider latitude than has yet been usually conceded to it. We do not perceive, however, that either the "facts or arguments" he has advanced go so far as "to prove the identity of puerperal fever and erysipelas." That the two diseases are frequently co-existent many have proved, and we know from our personal observation. But the frequent co-existence of two diseases would scarcely lead us to infer their "identity." Still, we are quite sensible of the numerous and weighty facts which Mr. Nunneley has adduced upon this interesting point of pathology, and we think it more than probable he would make converts of many to his opinion. For our own parts we hesitate, and cannot go so far as he does upon this subject.

The *causes* of erysipelas, as enumerated by Mr. Nunneley and Dr. Donellan, we do not deem it necessary to dwell upon. Most of our readers are doubtless aware that it is still an unsettled point in the profession, whether erysipelas be a contagious or an infectious disease.

"By many persons," says Mr. Nunneley, "these two terms are used as synonymous expressions, by others not. If by the word contagious be meant that mode of propagation which implies diffusion by personal contact alone, as syphilis or scabies are spread, then probably erysipelas would not rank as a contagious disease; but if it be intended to express that mode of propagation, in which a disease is conveyed by the contamination of the atmosphere, then most assuredly erysipelas is an infectious or contagious disease, if any are so, and we are to believe the evidence of our own senses, and the testimony of numerous witnesses." (p. 143.)

Dr. Donellan's opinions upon this point lead to the same conclusion. "It is impossible not to admit the existence of an erysipelatous constitution of the atmosphere.† . . . . The difference of opinion that exists in England and France with regard to the contagious nature of erysipelas, would tend to prove the influence that climate and habits of life exert in modifying even the nature of disease. Numerous facts, authenticated by indisputable authority, go to prove the contagious nature of erysipelas in Great Britain and Ireland, while equally respectable authorities in France concur in the opposite opinion." (p. 145.) Without

* Dr. Alison on Inflammation. (Library of Practical Medicine, vol. i. p. 85, 1840.)

† During an epidemic erysipelas that prevailed in Paris, 1828, Dupuytren was reduced to the necessity of postponing all operations that were not very pressing, and in the lunatic asylum at Charenton, all external revulsions were obliged to be suspended. These facts are mentioned by Dr. Donellan, and they are good examples of similar ones which have occurred in the public medical institutions of this country.

meaning to assert that erysipelas is always a contagious disease, we think it may be laid down as a safe, and indeed indispensable rule, for a practitioner to act upon the principle that it may be so, especially when several cases occur at the same time. It is especially incumbent upon practitioners of midwifery to abstain from visiting puerperal women shortly after having seen patients with erysipelas. The same caution will apply with equal force and propriety indeed to other diseases, the contagious nature of which may even be suspected. That many risks of the kind to which we allude, more particularly with reference to lying-in women, are daily incurred by practitioners we know; that no mischief results in the majority of instances we admit; but, however frequent the escapes may be, the practitioner is neither morally nor professionally justified in having exposed his patients to any degree of danger, however slight it may be.

Our limits do not permit us to enter into the *symptomatology* of erysipelas, which is described at much length both by Mr. Nunneley and Dr. Donellan. We must observe, however, that several cases have occurred to us which prove that the "vesications, which by some authors are said always to occur, and which by some nosologists, as Willan, Bateman, and Rayer, are made the basis of classification, are by no means a necessary or an invariable accompaniment in mild cases, even when the face is the seat of the attack, though more common here than in other parts of the body." (Nunneley, p. 159.) Again too, from all we know of the disease, and we have had abundant opportunities of watching its tendency during thirty years in public and private practice, we agree with Mr. Nunneley that "under all circumstances there is a decided tendency in this complaint to assume a depressed type." If there are exceptions to this statement, they are rare we think; too rare to disturb the general rule. Mr. Lawrence, on the contrary, "is quite at a loss to discover in this affection those marks of debility which some have so much insisted upon."*

Erysipelas in Infants. Of this formidable malady a brief account is given by both our authors. We are sorry to confirm their opinion of its generally fatal character; and we believe with Dr. Donellan, "that all means, rational and irrational, have been generally found ineffectual, and that favorable terminations are more referrible to spontaneous and uncomputed results than attributable to the treatment employed." This form of the disease is very uncommon among children in private families where habits of cleanliness are observed, and where wholesome air and wholesome food are enjoyed. On the contrary, it is not now uncommon, and was formerly much more frequent, especially in its epidemic form, in crowded localities and institutions, where many children are congregated together and exposed to the deleterious influences of bad air, bad food, and uncleanliness. Referring to the works themselves for the diagnosis, prognosis, and post-mortem appearances of erysipelas, we must devote the remainder of our notice to a brief sketch of the opinions given upon the treatment.

GENERAL TREATMENT. Mr. Nunneley briefly refers to the various modes of practice that have been adopted, and dogmatically insisted upon as the best by different writers. He is inclined to fear that "even

* Med. Chir. Trans., vol. xiv., p. 28.

now," the supposition is too widely spread, that any means which have been successfully and judiciously urged in one case of illness, are therefore indiscriminately to be employed in another, which bears the same name, regarding rather the name than the nature of the thing: "for which error the term specific disease is, in part at least, accountable." For our own parts we feel little or no apprehension upon the subject. We do not believe that the practical blunder referred to by Mr. Nunneley is at all "widely spread." Few practitioners, really deserving the name, ever hesitate at the bed-side of the patient to settle the abstract nosological title of the disease for the guidance of their practice, and if errors are committed in the treatment, they very generally, we believe, are attributable to other causes than the "reverence for a name."

Mr. Nunneley lays down three indications in the treatment of erysipelas: 1, to arrest the progress of the disease in its commencement; if this cannot be accomplished, 2, to avert the evils arising from its progress; the disease being subdued, 3, to remove as completely as may be, the effects of it. To those who regard erysipelas as a strictly specific disease, and a true exanthema, the first indication will appear useless because impracticable. By some then it is maintained that erysipelas cannot be arrested in its progress, but that, like measles or smallpox, it always runs an uniform period. It is not denied that the duration of erysipelas may generally be tolerably uniform after the disorder is fully established, but "that in the early stages, if properly treated, it is never arrested," Mr. Nunneley is not prepared to admit. We quite agree with him. We think with him that every practitioner who has had under his care patients who are obnoxious to repeated attacks of erysipelas must have noticed that where the symptoms, local and general, are at first identical, the disorder will at one time assume a formidable shape, and at another terminate in a short time, the cutaneous affection never having advanced beyond a mere blush: these observations we and many others no doubt have frequently made; and we believe that "these different results depend much upon the treatment employed." We have three females under our care who are subject to erysipelas of the face, and we, as well as our patients, feel quite satisfied that to a great extent the severity and duration of the disease are very much controlled by appropriate treatment upon the very first manifestation of the attack. "An emetic followed by a dose of calomel and a brisk purgative, so as effectually to clear out the primæ viæ," are, in Mr. Nunneley's opinion, the most certain means of accomplishing this favorable termination. And here we may appropriately refer to a point which is in our opinion accurately commented upon by Dr. Donellan, namely, the exaggerated apprehensions generally entertained from the sudden disappearance of even slight erysipelatous affections of the face, whether occurring spontaneously or caused by treatment.

"Erysipelas limited to a small portion of the face often disappears in three days, and even less, without any inconvenience; and persons subject to frequent returns of the disease, often get through their last attacks in two or three days without the smallest accident. It is far otherwise, however, when a first and extensive erysipelas suddenly disappears, (metastatic erysipelas,) as the delitescence is then generally the effect, and not the cause as has been said, of some intercurrent visceral inflammation." (Donellan, p. 149.)

The frequency of this metastasis has been no doubt exaggerated, as

may be inferred from the opinion of Louis, whose great experience has never furnished him with an instance of the kind. Such too has been the result of our own, no doubt, more limited observation. In the many cases of erysipelas we have witnessed, we have often heard fears of metastasis expressed, but we never knew it happen. In the treatment of erysipelas as of most other diseases, we shall look in vain for "specific" remedies. We must attack symptoms as they arise, and endeavour as far as we can to suppress them. As Mr. Nunneley very truly says, the difficulty is in the selection and application of the precise measures to be used, and the proper time for applying them with the most effect and advantage.

Venesection. In the treatment of erysipelas, venesection, as is well known, has been strongly advised by some, and as warmly opposed by others. Mr. Nunneley gives us a brief abstract of the leading "authorities" upon both sides the question. And certain is it that were we to be guided alone by authority and names, it would be difficult to choose between the two exclusive methods of powerful tonics or vigorous bloodletting; for on either side we have a nearly equal weight of talent, experience, and undoubted veracity. The opinions we have formerly* very briefly expressed upon this subject remain unaltered, and Mr. Nunneley agrees with us in the main. And we cannot help thinking that, however perplexing the contrariety of opinions to which we have alluded, may appear to the reading student, much of the difficulty in determining either for or against the use of the lancet, will vanish at the bed-side of the patient, by the exercise of even an average share of that judgment and discrimination which the practitioner must be supposed to possess. Mr. Nunneley's comments upon the subject appear to us sensible, correct, and impartial. In a disease like erysipelas, ranging from the mildest to the severest degrees; attacking the young and plethoric as well as the old and infirm; those of good constitutions, and with unimpaired viscera, in common with the broken-down drunkard and cachectic habit, it is not merely "out of the question," it is absolute and unqualified folly for any man or "authority" to assert that our treatment is to be uniform. "It must be as diversified, and present as many shades of difference as the symptoms which demand its employment." Passing over some remarks in furtherance of this view, which Mr. Nunneley in a professed treatise very properly introduces, but which can only be required by those who have everything to learn, we come to one point upon which we shall rest for a moment.

Dr. Duncan and Mr. Lawrence treat the opinion that patients in large towns support depletion worse than those in the country as ridiculous; the latter asks "at how many miles bleeding becomes safe or proper, and what size or population of a town renders it inadmissible?" Nevertheless Mr. Nunneley conceives that the opinions of Willan, Bateman, and others, are founded upon reason and supported by experience. "There can be no doubt that on the whole, those who constantly reside in large towns are not so liable to high inflammatory action as those who live in the country, and that the latter not only will bear, but also require more antiphlogistic treatment in the same disorders than the former do." That this is a fact of general truth we are quite convinced. On the whole

* Br. and For. Med. Review, vol. V. p. 367.

Mr. Nunneley thinks that erysipelas is not one of those disorders for the cure of which venesection should form a prominent part of the treatment; and if not practised within a few days after the commencement of the attack, ought not, except under very extreme circumstances, to be practised at all; and he believes there are few cases in which the patient does not recover much sooner if general bleeding has not been practised than where it has. In the following sentiment we perfectly agree:

"It is an easy thing for the purpose of producing an immediate effect, or 'knocking the disease on the head,' as it is often termed, to take from a man two, three, or four pounds of blood; but should he survive, the probability is, that he will not for several years, if for ever, be the sound man he was before the shock his system has had inflicted upon it by such heroic proceedings." (p. 220.)

Tonics and stimulants. In adults there are few cases of erysiplas in which bark, or any tonic or stimulant, can be proper at the onset of the disease. In infants quinine may be employed at the commencement of the attack with advantage in most cases. Stimulants may more commonly be used with good effects earlier than tonics, and especially stimulants of a diffusible kind, of which ammonia is certainly the best, as it appears to rouse and give energy to the nervous system, without increasing vascular excitement. At a later stage, when the tongue becomes dark and glazed, the pulse weak and feeble, and the strength failing, wine, or perhaps the accustomed beverage of the patient, gin and porter, may rouse the sinking powers of life.

"There is nothing inconsistent in, at the same moment, both abstracting blood locally and administering stimulants or tonics; and in many cases the two may be practised with great advantage; a part may be gorged with blood, while the system is much depressed." (Nunneley, p. 223.)

Emetics are not unfrequently productive of salutary effects in those by no means unfrequent forms of the disease where the symptoms indicate disorder of the biliary secretions. In many instances both Mr. Nunneley and Dr. Donellan believe the disease is cut short by their use. In the opinion of the former the tartarised antimony, recommended by Desault, is the worst form of emetic that can be employed, when it is given alone. He prefers oxymel of squill, and ipecacuanha and antimony wines in equal parts.

Purgatives, Mr. Nunneley says, "in by far the majority of cases, if properly used, completely obviate the necessity for venesection, especially if they have been preceded by an emetic." (p. 230.) The selection of particular remedies of the class, and the limits to their use are pointed out.

Mercurials are clearly indicated by the manifest derangement of the abdominal secretions, and especially those of the liver.

"Not only in the commencement of an attack of erysipelas is a dose of four or six grains of calomel with jalap or one of the neutral salts proper, but it is often of the greatest use to get the system in some slight degree under the influence of mercury. Calomel, in combination with tartrate of antimony and opium, is one of the best and most important means that we possess of keeping the disease under our control, and preventing the destructive sloughing or effusions." (Nunneley, p. 232.)

Diaphoretics and diurectics are useful auxiliaries. Mr. Nunneley recommends as the best diaphoretic and diuretic, to allow the patient to

drink freely of simple water where there is great heat and thirst; the water being of the same temperature of the apartment. He has never known any metastasis or other untoward accident occur from its employment. Colchicum, digitalis, and antimony too are remedies of importance.

Narcotics are approved of by most practitioners. In the early stages the milder, such as hyoscyamus or extract of poppies, with appropriate combinations are safer than opium. At a later period a full dose of opium or of the acetate of morphia at bed-time is of much benefit. And if opiates lessen the pain and irritation, procure sleep, and diminish excitement, they are of decided use and ought to be freely given. In the later stages of the disease, when the strength fails and there is great suppuration with sloughing, opium in large doses at bed-time, often acts like a charm by allaying pain and procuring refreshing sleep and invigorating the stomach.

"In combination with ammonia, opium in very large quantities is, sometimes from the very first, necessary in the treatment of such cases of the cellular variety of erysipelas as have been described by Travers as the effect of poison upon the system, and by Colles and Duncan as diffuse cellular inflammation; and in those most malignant forms of the affection which arise from the poisonous fangs of a snake, with stimulants and calomel, the system will bear excessive quantities, and it affords our only means of salvation." (Nunneley, pp. 241-2.)

Mr. Liston speaks highly of the extract of aconite; its use, he states, is often followed by great abatement of vascular excitement, so that the necessity for bleeding is done away with. It may be given in doses of half a grain.*

Turpentine has been strongly advised in the advanced stages of erysipelas, and cases are on record which really seemed desperate, and yet under its use the patients recovered.

"Certain it is," says Mr. Nunneley, "that in some instances where coma has been intense, the pulse sinking, the tongue dry and glazed, and the teeth imbued with sordes, after other remedies had been abandoned in despair, the administration of the oil of turpentine has apparently saved the patient." (p. 244.)

LOCAL TREATMENT. Local means are perhaps of as much importance in the management of erysipelas as those which act through the system. Mr. Nunneley is not favorably inclined to the application of leeches to parts affected by erysipelatous inflammation. He would generally prefer the local abstraction of blood by means of punctures or incisions. Small punctures are the most generally applicable and the most useful. We have often seen this practice extremely beneficial; but we have no experience of either the necessity or the effect of making these punctures by "hundreds or thousands," as recommended by Dr. Bright.† Puncturing is peculiarly applicable in erysipelas of the face, and is more effectual than on the limbs; and when it is adopted freely, from the commencement of the attack, suppuration will never, or very rarely, take place, even in the loose texture of the eyelids.

Incisions. Upon the much-contested practice of making incisions upon the inflamed part, and the extent to which they may generally be carried, much instructive information is afforded both by Mr. Nunneley and Dr. Donellan. Mr. Nunneley's comments upon the very long incisions ad-

* Elements of Surgery, 2d Edit. p. 61. † Bright's Reports, vol. ii. p. 97.

vised by Mr. Lawrence and others appear to us judicious. "The hemorrhage from such long incisions is often very alarming; nor can I wholly disconnect the death of some of the patients, whose cases Mr. Lawrence has with much candour related, from the loss of blood occasioned by the incisions." (p. 260.) Mr. Earle relates the case of a young woman "in which an incision was made which extended from an inch below the great trochanter, to within an inch and a half of the ankle."* We cannot even reflect upon such a mode of practice, without some touch of feeling for the patient; and with Mr. Nunneley we should require, before we would countenance its repetition, the strongest proof that so distressing a measure was imperatively necessary. Mr. Lawrence and Mr. C. Hutchinson are decidedly in favour of the incisions being made at the very commencement of the disease, thinking if then made they prevent its increase, and ward off suppuration and sloughing. Mr. Liston and Baron Dupuytren wait until matter is formed. Mr. Nunneley prefers a medium course. He would be satisfied, in the earliest stages, so far as the local abstraction of blood is concerned, with leeches or punctures, with cold evaporating lotions: but if the inflammation still proceed, uncontrolled by these means, he would not wait until suppuration was fully established and the cellular membrane broken down, but at once make two, four, or six incisions, each two or three inches long, in the most prominent places, or where matter and sloughs are most likely to form, down to the fascia. If there be reason to suspect the inflammation has passed beneath the fascia it also should be divided. Of course incisions are not to be made when the inflammation is limited to the skin.

Cold evaporating lotions are of considerable benefit in the treatment of erysipelas, Mr. Nunneley says. He would however consult the feelings of the patient, and substitute warm lotions if cold increased the pain or produced a general feeling of chilliness. We scarcely remember an instance in which our patients have not greatly preferred, and have apparently been more relieved by tepid lotions. Mr. Nunneley has no fear of applying cold freely to the whole scalp when it is the seat of the complaint. Nor should we have, from our own experience, provided it was not distressing to the feelings of the patient; still, while Pearson† is decidedly against the use of cold,—and Liston‡ says that "cold lotions may afford temporary relief, but their use is fraught with the utmost danger,"—and Alibert declares "that to apply cold is madness,"—we think that caution would dictate a preference for tepid lotions in most cases of erysipelatous inflammation, whatever may be the part affected.

Stimulant applications to the inflamed part are, we believe, of limited utility. They may be applied with advantage where gangrene threatens, and there is great depression. There are still some other local remedies that have been occasionally employed with more or less benefit in erysipelas. The chief are, absorbent powders to the surface; fomentations; and various ointments; mercurial ointment; nitrate of silver; bandages; and tonic spirituous injections. For the detailed account of the use of these various means we must refer to our authors themselves. But we

* Med. and Physical Journal, vol. 57. † Surgery, p. 217. ‡ Elements of Surgery, p. 65.

must not close our review without bestowing a moment's notice on a remedy of recent application to the treatment of erysipelas, viz.:

Tincture of Iodine. This, says Mr. Nunneley, "is a remedy which, so far as I know, has not been used in erysipelas except by myself, and those to whom I have mentioned it." This is a statement which certainly demands some explanation on the part of the author, inasmuch as precisely the same treatment, with the same formula, and in the same disease, was recommended by Mr. Davies of Hertford, in a pamphlet published upwards of two years since, and specially devoted to the subject. A review of this work was given in our Eighth Volume, p. 512; and to this notice we refer for the same information as is contained in this part of Mr. Nunneley's work. Either Mr. Davies is one of "those to whom Mr. Nunneley had mentioned" the practice; or Mr. Nunneley has committed a singular oversight, in overlooking a work made so generally known by the notice taken of it by ourselves and our contemporaries.

Mr. Nunneley's treatise is a sensible and well written essay. He may not probably convert all to his opinions as to the propriety of extending the term erysipelas so far as he has done; he has, however, made out a strong case in favour of the views he advocates, and he is entitled to the somewhat rare praise of having questioned and criticised the opinions of others dispassionately and justly. Dr. Donellan's article is necessarily confined within rather narrow limits, but it gives a well condensed abstract of the result of past experience of the nature, varieties, and modes of management of the disease.

Art. VI.

Traité Pratique de la Pneumonie aux différens ages et dans ses rapports avec les autres maladies aigues et chroniques. Par A. Grisolle, d.m.p., Médecin du bureau central des Hôpitaux de Paris, Membre de la Société médicale d'Observation, &c. &c.—*Paris*, 1841. 8vo, pp. 747.

Practical Treatise on Pneumonia, considered as it occurs at different ages, and in its relation to other diseases, Acute and Chronic. By A. Grisolle, m.d. &c. &c.—*Paris*, 1841.

The name of M. Grisolle became associated with the subject of pneumonia in the year 1836, by the appearance of a short but very excellent essay on that disease in the Journal Hebdomadaire. Not satisfied with having added the analysis of original cases given in that "Memoir," to the existing stock of knowledge, M. Grisolle has, during the intervening period, steadily pursued a course of clinical investigation of the malady, examined with marked care the contributions, whether domestic or foreign, which are to be found in the French language referring to his chosen subject, and thereby produced a monograph on inflammation of the lungs possessing a character of completeness, which in the present state of knowledge could not have been given to the history of any other disease.

In conducting our readers through this bulky tome we shall assuredly not attempt to notice more than a fraction of the topics upon which enquiries are instituted by M. Grisolle; we shall not attempt to draw up a condensed history of the disease founded on his volume, but cull from the whole such facts, results, and opinions, as appear to give an additional degree of certainty to established positions, to settle points which have hitherto been subjects of debate, or direct investigation in paths promising valuable discovery to the enquirer.

The title of M. Grisolle's work attacts attention to one of its distinguishing features,—the separate consideration given to the disease as it exists in subjects of different ages, in the new-born infant, the child, the adult, and in individuals of advanced age. Such method in the treatment of the subject is in truth indispensable; so different are the conditions, both anatomical and symptomatic, observed in individuals belonging to these different categories, that descriptions, perfectly accurate if applied to patients of one age, would be seriously defective, positively and negatively, if understood to refer to those of another. In using the word age, we employ it in the sense of epoch or period of life.

The volume is mainly founded on the analysis of 373 cases collected by the author in the course of three years; during two of which he filled the office of *chef de clinique* at the Hôtel-Dieu, and during the other discharged the duties of physician in two of the largest wards in that institution. Of these 373 cases, 304 are examples of *primary* pneumonia, that is, occurring in individuals free from evident disease at the period of attack; 69 refer to subjects already labouring under some serious acute or chronic affection;—to these latter cases M. Grisolle applies the epithet *secondary*. The numerical analysis of his cases is the groundwork of all the general statements in the work; but in order to render its perusal a less arid task, he has very frequently kept back the numerical details,—preferring to make his text a sort of commentary upon these than to divert the reader's attention from the description to arrays of figures. Beyond all question M. Grisolle has thus rendered his volume less difficult of perusal; but we are disposed to think he would have acted more wisely had he, instead of suppressing such documents, collected them together in the form of an appendix.

Anatomical history and etiology. M. Grisolle follows in the steps of Laennec in recognizing *engorgement* as the first stage of pneumonia. He admits the probable correctness of Dr. Stokes's observation, that this is sometimes preceded by another condition of the pulmonary tissue, (this we formerly described,) but having himself failed in detecting it, he is unwilling to give it a place among the necessary stages of the disease. The course of the physical signs of pneumonia points to the likelihood of Dr. Stokes's observations on the point being well founded.

The weight of the healthy lung is about 235 grammes, ($7\frac{1}{2}$ oz. nearly.) M. Grisolle has found the organ when in the state of red hepatization weigh 2500 grammes, considerably more than ten times the natural amount.

The following table acquaints us with the ordinary modes of union and the relative frequency of the different stages of the disease in forty fatal cases:

1st and 2d stages united in	4	cases.
1st and 3d ,,	3	,,
2d and 3d ,,	16	,,
The three stages united in	2	,,
The 2d stage only in	7	,,
The 3d stage only in	8	,,

From this statement numerous very palpable inferences may be drawn.

M. Grisolle, it appears therefrom, never examined a subject in whom the disease had not already passed the stage of engorgement. We agree with him in believing, however, the malady might prove fatal at this early period of its development in cases where the entire masses of both lungs were simultaneously or almost simultaneously attacked. But such manner of seizure is singularly rare, a fact to which, as proved by M. Louis, we have had occasion more than once to call the attention of our readers.

Site. Many are the pages of this journal, too, in which we have been called on to consider the relative frequency of pneumonia of the right and left sides; we are tempted once again on account of the largeness of the numbers within our reach, to touch upon the point. Of 280 cases observed by M. Grisolle, 166 were on the right, 97 on the left side; in 17 both lungs were affected. Adding these numbers to those published by Messrs. Barth, Bouillaud, Briquet, Chomel, Forbes, Lombard, and Pelletan, we shall have a total of 1430 cases, of which the right lung furnished 742; the left 426; while the inflammation was double in 262. This predominance of the right over the left side exists at all ages, a fact elsewhere referred to as it respects new-born infants, (Brit. and For. Med. Rev., vol. VII. p. 78, Jan. 1839;) and established in aged subjects by the enquiries of MM. Hourmann and Dechambre. M. Lombard of Geneva, some years since, gave out a statement to the effect that pneumonia of the left side is almost twice as frequent in adult females as in males, and that the same relation of the sexes is observed in infancy, though the numerical superiority on the part of females is at that period of life not so great. The latter of these assertions does not stand examination; the only 17 cases of pneumonia in the new-born infant, in which a single lung only was affected, collected by MM. Valleix and Vernois, were every one examples of affection of the right lung. Nor is the former of them more tenable. M. Grisolle finds that pneumonia of the left side forms scarcely one fourth of the total number of cases in adult females, while it constitutes about one third in males of the same standing in point of age. The author devotes two pages to an analysis of the explanations offered by Billard, Lombard and others of the greater frequency of the malady on the right side, and having shown them to be devoid of foundation, proposes in their room the notion that it depends upon the right lung being, *from its greater size*, more exposed to the action of morbific agents. We confess this suggestion strikes us as anything but satisfactory.

As respects the frequency of double pneumonia in the adult, we believe that the results of M. Grisolle's own observation may be more implicitly trusted to than the more extensive calculation founded on the united experience of the observers named. We have ourselves very rarely met

with double primary pneumonia; of 125 cases observed by M. Barth, 8 only were double; add to this the indubitable fact that the double subcrepitant ronchus of capillary bronchitis has been, and even continues to be, mistaken for the crepitation of parenchymatous inflammation—a ready source of multiplication of cases of double pneumonia. Certain circumstances influence its development: in new-born infants it is vastly the most common form; and in advanced age, of more frequent occurrence than in adults; lobular and "metastatic" pneumonia are almost invariably double; and M. Rayer has pointed out the greater frequency with which both lungs suffer in some epidemic constitutions than in others.

Of 264 cases in which M. Grisolle was enabled to determine this point, the upper lobe was the first to suffer in 101; the inferior in 133; the middle third of the organ in 30. Like other observers who have examined this point, he finds that the tendency to disease of the upper lobe varies in different years; it has sometimes been observed to become almost epidemic. From M. Grisolle's cases it would appear that pneumonia of the apex is about two and a half times as frequent on the right as on the left side.

Since an announcement was made by M. Louis that patients observed by him with pneumonia occupying the superior portion of the lung were, on an average, aged 54, while those whose inferior lobe suffered first were only 35, age has been supposed to exercise a material influence on the primary seat of the inflammation. M. Grisolle's results would tend to confirm that of M. Louis in its general bearing; but the difference observed byhim in the ages of the two categories of patients was not by any means so great. Our author's experience confirms also the announcement of M. Briquet, that pneumonia of the upper lobes is more common in individuals of weak constitution: the connexion is not very readily seized.

M. Grisolle leaves the question of the elementary seat of pneumonic inflammation as he found it, and as it is long likely to remain, that is, undecided. How could it be otherwise when new doctrines are continually ushered into notice respecting the nature and mode of arrangement of the elementary constituents of the lungs, all of them incompatible with each other? MM. Hourmann and Déchambre have endeavoured, he observes, to explain the granular or the uniform and plane aspect of hepatization by the seat of the phlogosis: in the former case the vesicles, in the latter the inter-vesicular cellular tissue are presumed to be mainly or solely affected. Whatever be the merit and justness of this suggestion, neither belong to the writers who have just been named. The same explanation of the granular and uniform appearances is to be found in Dr. Williams's article on Pneumonia in the Cyclopædia of Practical Medicine, (p. 414,) an article not unfrequently quoted by M. Grisolle.

Varieties. We pass over most abundant details upon the subjects of primary, perforative, and "metastatic" abscess, and are arrested by the author's description of a lesion occurring consecutively to inflammation, and one which he considers allied to inflammation, though unprepared to pronounce an opinion upon its *exact* nature.

"In an individual who died on the ninth or tenth day of an attack of pneumonia on the right side, I found the greater part of the lung in a state of red and gray hepatization. In the centre of the lower lobe appeared a spot of four or five centimeters in extent, which was rendered very remarkable among the surrounding grayish-coloured tissue by its mahogany and blackish hues. The lung was here converted into a sort of pulp, without the admixture of clots; it *exhaled no smell,* fell away under the slight impetus given by water allowed to pour on it, and left in its place an irregular excavation, two centimeters deep, the walls of which, stained of a blackish colour, presented a great number of cellulo-vascular filaments. This morbid state had not the aspect of pulmonary apoplexy, and differed from gangrene in the absence of the characteristic odour. However, I am inclined to believe that this softening must be considered a species of gangrene of the pulmonary tissue, analogous to certain softened states of the brain and medulla."

Not having met with an example of this very peculiar lesion, we are unable to offer an opinion concerning it.

The condition of the pleura investing inflamed lungs furnishes a distinction between the pneumonia of infants and of aged subjects on the one hand, and of adults on the other. Concomitant pleurisy is as rare at the two extremes of life as common in individuals of ripe age.

Dilated Bronchi. The enquiries of Dr. Ward and of MM. Rilliet and Barthez, in contradistinction to those of Laennec, Andral, Chomel, Hourmann, and Déchambre, would seem to show that dilatation of the bronchi is a much more frequent coexisting (probably consecutive) lesion in the pneumonia of infancy than of adult and of advanced age. M. Grisolle attributes the dilatation much less to the parenchymatous inflammation than to the capillary bronchitis, which in infancy precedes or complicates the major part of pulmonary phlegmasiæ; he explains the dilatation by the eccentric pressure on the tubes resulting from the abundance of secreted fluids. M. Grisolle is, we believe, mistaken in his opinion respecting the rarity of dilatation of the bronchi in the pleuro-pneumonia of adults. Dr. Williams has, as many of our readers are doubtless aware, successfully traced the production of dilated bronchi to the influence of pleuro-pneumonia; it is true that such influence is almost peculiar to the chronic form of the disease, but in M. Grisolle's description of this form, the discussion of the topic in question is similarly omitted. We would refer M. Grisolle also to the ingenious paper of Dr. Corrigan, in the Dublin Journal of Medical Science, (vol. xvi.) on the affection which he has well described under the most ill-chosen title of "cirrhosis" of the lung.

Cardiac concretions. From the facts observed by M. Grisolle, the proposition originally announced by Burserius—that pneumonia is to be regarded as a cause of the formation of polypous concretions of the heart—derives strong confirmation. These facts as satisfactorily demonstrate the fallacy of the so-called *law* announced by M. Bouillaud,* that sanguineous concretions, of yellow colour, fibrinous character, and firm consistence, and interlaced with the cordæ tendineæ, constantly exist in the second stage of the malady. Had M. Bouillaud's *law* been less ambitiously stated, and coagula of all kinds, soft, black, grumous, &c. been embraced by it, it would have perhaps proved sound; though even then the number of cases on which it was founded (fourteen) and

* British and Foreign Med. Rev., vol. IX. p. 549, April, 1840.

the fact that the influence of other diseases in the same direction had not been investigated, might have fairly caused a judicious thinker to pause before he so confidently proclaimed it.

Some at least of our readers may be aware that Pasta, the great disbeliever of the theory attributing an ante-cadaveric origin to certain cardiac coagula, affirmed, that if buffy blood be received into the heart of an ox, it will form therein true "polypi." M. Grisolle performed this experiment in a modified, but certainly far from satisfactory form six times. He received blood from the veins of patients labouring under pneumonia or articular rheumatism directly into a human heart previously emptied and washed, and kept the whole in a state of perfect rest and removed from the influence of the air for twenty-four hours;—at the end of this time the blood was found forming simply black, soft coagula, scarcely adherent to the parietes. In three cases there were some fibrinous particles, either separate or mixed with the black coagulum, but in no single case those perfectly yellow, dense, elastic, closely adherent concretions, intertwined among the columnæ carneæ, met with by M. Grisolle in one fifth of the subjects dying of pneumonia examined by him. This observer shows distinctly that the inflammatory diathesis exercises the most palpable influence on the production of these latter concretions; *how*, he is unable to determine, though he inclines to believe them formed in the same manner as plastic exudations in the pleura.

Gastritic complication. M. Grisolle found that in one fourth of the cases examined a greater or less extent of the gastric mucous membrane was softened; and proves, from the fact of this change having occurred with equal frequency in subjects who had not and who had taken tartarized antimony, that the grounds for Broussais' anathema of that admirable salt were purely imaginary. The all-important law discovered by M. Louis respecting the development of gastric lesion in the course of febrile maladies is sufficient to account for its presence and suggest its independence of medicinal agents. Of the nature of the softening M. Grisolle is as unprepared to speak positively as his predecessors; he thinks it "probable" that he saw a case in which it depended on solution by the gastric juice. His own cases are subversive of the notion of its inflammatory character, as the characteristic conditions of phlogosis did not exhibit themselves in the vicinity of the inflamed part. Of the non-inflammatory character of the lesion under these circumstances we do not see how any doubt can reasonably be entertained.

M. Grisolle supplies some very excellent descriptive matter upon *chronic pneumonia*, both the primary species and that depending on adjacent tuberculization, (the former of which he, with the majority of observers, regards as an affection of extreme rarity,) examines with much detail the peculiarities of secondary or intercurrent pneumonia; and having thus completed the anatomical history of the disease, passes to the consideration of its etiology. We shall extract some valuable statistical information upon this branch of his subject.

Age. In illustration of the influence of age in the production of the disease, may be given the subjoined tables:

Ages.	Grisolle.	Leroux, Chomel, Bouillaud, Briquet.	Totals.
14—20	34	84	118
20—30	82	190	272
30—40	58	117	175
40—50	43	107	150
50—60	39	84	123
60—70	26	37	63
70—	10	11	21
	292	630	922

The conformity of these two pretty extensive series of facts furnishes excellent motive for confiding in the general result deducible from them. But these tables do not accurately represent the influence of age on the production of pneumonia; they teach us simply the relative frequency with which the disease is observed at different ages. As M. Grisolle correctly observes, the great frequency wherewith the disease is observed in subjects between the ages of twenty and thirty may in reality depend upon the greater number living at that age. And that this is in truth the case appears from M. Grisolle's comparison of the numbers above given, with the results of the Parisian census for 1817. It appears, that although from twenty to thirty is still the period of life furnishing most cases of pneumonia, yet that the superabundance is not by any means so great as would follow from the tables. Again, the latter would show that the frequency of pneumonia between twenty and thirty is more than double that between fifty and sixty; but if the frequency be calculated according to the living population of these two decennial periods, the difference falls to about a tenth. And this difference might actually, and in all probability would, have been in the other direction in respect of individuals past sixty, had the cases appearing in M. Grisolle's tables not been observed at hospitals into which poor persons of that age are rarely known to penetrate, as there are asylums set apart for their reception. We cannot help remarking here that the calculations by which the results in the tables were corrected should have been given.

Sex. The greater frequency of pneumonia in males than in females has been a subject of remark among writers from a very early period: the following figures establish its degree in the Parisian hospitals for adults:

	Males.	Females.	Totals.
Chomel	73	24	97
Briquet	95	46	141
Grisolle	236	68	304
	404	138	542

Shall we from these figures conclude that the male sex constitutes in itself a predisposing cause of pneumonia? No, replies M. Grisolle: the greater frequency of the disease among males rather originates in the nature of their employments than in their sex. This judgment he bases upon the ascertained fact, that when field and other open-air labour is shared equally by men and women, the proportion of pneumonic cases among them is very closely or exactly the same. In infancy, too, females

suffer as much as males: this results from the following numbers published by

	Boys.	Girls.	Totals.
MM. Hache . .	50 . .	58 . .	108
Valleix and Vernois	67 . .	62 . .	129
	117	120	237

In this country we have the means afforded us in our admirable system of registration of ascertaining the relative frequency of the disease in the sexes on a much larger scale. It appears that in the year 1838, out of one million living of each sex, pneumonia destroyed 1339 males and 1064 females. This result refers to all ages, all situations in life, individuals following every variety of occupation, and shows that the gross mortality of the disease still differs to a rather serious amount in the two sexes.

Deformed chest. Humpy subjects and those having a defective conformation of the thorax are, if the assertion of Quarin and T. Home be correct, more prone to the disease than persons with well-formed chests. M. Grisolle has put this opinion to the test of observation; and here are his results. 1. Of twenty-eight humpy persons aged from twenty to seventy-five, (the greater number had passed the thirty-fifth year,) carefully interrogated by M. Grisolle, not one had at any period of their lives suffered from pneumonia. 2. M. Bouvier, who is at the head of an orthopædic institution, has observed pneumonia but once among its inmates during the last twelve years. 3. Of a vast number of humpy subjects opened by M. Bouvier, four only presented evidence of having died from pneumonia. 4. Of ten similarly deformed subjects opened by M. Grisolle himself, one only had fallen a victim to pneumonia. These facts supply sufficient evidence of the opinion professed by Quarin and Home: but they refer to *primary* pneumonia only; *secondary* pneumonia, on the contrary, appears to be more frequent among deformed subjects than those of normally constructed chest of the same age. Thus of twenty-four humpy subjects dying of various diseases, sixteen had manifest pneumonia, and in eight of these, the pulmonary inflammation appeared the immediate cause of death. In this point of view the class of individuals referred to resembles infants aged from two to five years.

There is much minute and valuable enquiry in the pages before us on the question of the influence of one attack of pneumonia on the development of another or others; but it unfortunately will not bear condensation.

Trades. M. Grisolle concludes from a large body of facts, the major part of which are derived from English sources, that such trades as require great muscular efforts on the part of those following them—such, again, as are exercised in the open air and expose those engaged in them to the inclemency of the seasons, furnish about two and a half times as large a share of cases of pneumonia as persons following in-door occupations. This result, which is little more than common experience would point to, must not be received as numerically correct by any means; of this M. Grisolle is himself well aware, and accordingly pronounces a caution on the subject founded upon a more judicious estimate of the difficulties attending the investigation of the influence of profession upon disease than is common to pathological writers. He notes the infrequency of the disease among sailors, when actually on the open sea, and prevented by

their situation from occasionally landing and indulging in excess of various kinds. To the regularity of life thus ensured he attributes the comparative immunity noticed. We are far, for our own parts, from contesting the reality of the prophylactic influence here recognized; but we must aver our persuasion that there is something more than this having its share in the production of the result observed. There seems in marine air to be actually something preservative from cold; at least there are few persons who have not found themselves enabled to take liberties at sea with impunity, which on land would be assuredly followed by an attack of disease. The wet decks may be paced for hours without manifest ill effects; we may envelope our limbs in sheets, not only feeling damp and clammy, but actually furnishing a fair share of moisture on pressure, and awake in the morning without the rheumatism or other miseries which would have inevitably rewarded us for the performance of such a feat on shore. Upon what this depends, it is difficult to determine; but we believe all will agree with us as to our correct general statement of the fact, and admit that regularity of habits cannot be its cause, inasmuch as persons whose mode of life had on shore been the most precisely regular are not less favoured at sea, than those who have left, with the land, the practice of drunken indulgence.

M. Grisolle finds that females following rude out-of-door occupations are more subject to pneumonia than those plying sedentary trades. He discovers no particular connexion between the function of menstruation and the outbreak of pneumonia, (his facts are very few in number however.) His enquiries prove the error of J. Frank's assertion, that women nursing are particularly liable to be seized with the disease.

Climate and season. From his examination of the influence of climate (which in its exact parts is founded on the statistical documents published in this country by the registrar-general and the army-board,) M. Grisolle infers that pneumonia is a disease of all countries, and everywhere, with the fewest exceptions, ranks among the severest maladies of each land.

The disease is most frequent, however, in "cold countries," like England, and those in which, instance Canada, the thermometer undergoes frequent and sudden variations. For the frequency of the malady in the Bermudas and in Malta, M. Grisolle professes himself unable to account. The frequent occurrence of the disease and consequent sudden change of temperature may account for the prevalence of the disease in the latter island.*

The state of the wind at the period fifty-four of M. Grisolle's patients were attacked, was as follows:

15 North-east	5 South-east
11 North-west	8 South-west
3 North	8 Perfect calm.
4 South	

In confirmation of the inference deducible from this table, comes the observation of MM. Hourmann and Déchambre, that during three consecutive years, whenever the number of pneumonic cases increased notably at the Salpétriere, the wind was invariably found to be from the north-east. Le Pecq had made the same remark respecting pneumonia in Normandy.

* See Sir James Clark's work on Climate, 3d Edition, p. 242.

Sudden chill. M. Grisolle has submitted to the most rigid scrutiny the evidence for and against the real influence of sudden chill, while the body is in a heated state, on the production of inflammation of the lungs. He well observes upon the easy sources of error in obtaining exact information respecting the extent of such influence, and points out that if we limit ourselves to the direct question—were you exposed to a sudden chill while in a heated state? we shall almost always receive an affirmative answer, for one or more of the following reasons: Because the patient mistakes the chill referred to for the rigors of invasion; because he confounds it with the greater sensibility of the body to the influence of cold, which attends the *prodrome* of acute diseases generally; and lastly, because (here is by far the most fruitful source of error,) he believes the occurrence of a chill the only way of accounting for the attack. Under these circumstances the sage clinical observer will put a series of questions, varying somewhat according to circumstances, but bearing generally upon the mode of occupation at, and the precise moment of, seizure—submit the patient to a sort of cross examination in short, whereby the truth may be elicited. Proceeding upon this plan, that taught by his illustrious master Louis, M. Grisolle found that of 205 patients, 49 only distinctly owed their malady to the sudden accession of chill. Coupled with those of two other accurate observers, these results may be considered to supply a very accurate measure of the influence under consideration: the numbers are as follows:

	Cases.	Seizure preceded by sudden chill.
Chomel	79	14
Barth	125	38
Grisolle	205	49
	409	91

This proportion is very different from that which the lively M. Bouillaud would lay down: regarding as useless the precautions in the manner of interrogation observed by M. Grisolle and all followers of accurate medicine, that writer, with more dogmatism than wisdom, affirms that almost every case of pneumonia, without exception, has its origin in the influence of cold. Proceeding as he does, our only astonishment is that the Broussaisist finds *any* exceptions; nor can we marvel (for it has from time to time been our fortune to follow him in his wards,) that he proclaims to be "utterly unfitted for the exercise, and more especially for the art of interrogating patients," all who presume to question the perfect accuracy of his own fancies. Such modest self-appreciation is characteristic of the man.

Complication with other diseases. M. Grisolle considers, in a section of much interest, the frequency of pneumonia as an intercurrent malady occurring in the course of acute or chronic diseases, as also the influence of the latter upon the development of the former. We must content ourselves with giving a mere numerical statement of some of the results he has obtained. First, be it observed, that the diseases of new-born infants are liable to be thus complicated, as, for example, hardening of the cellular tissue, and the affection termed *muguet* by the French. In children from the age of two to sixteen there are six diseases, in the course

of which this disease is prone to occur in a very high proportion, as appears from the following figures:

Secondary pneumonia occurs in	$\frac{7}{8}$	of all cases of	croup.
,,	$\frac{5}{6}$	,,	cancrum oris.
,,	$\frac{1}{3}$	,,	enteritis, measles, hooping-cough.
,,	$\frac{1}{4}$	,,	smallpox.

The frequency of pneumonia is well known to be generally materially less in the adult affected with measles than in the infant and child; in certain epidemic constitutions, however, the proportion of pneumonic cases in adult rubeolous patients is far from small. Of 15 adults suffering from measles during an epidemic at the Salpétrière, 7 were seized with pneumonia.

M. Grisolle insists upon the frequency with which the disease complicates glanders and phlebitis. As respects puerperal fever, declared by M. Tonnellé to be thus attended in one twelfth of the cases, our author shows that a very important distinction is to be established. In that class of cases in which the anatomical lesions consist in simple metro-peritonitis with or without lymphangitis, pneumonia is so rarely developed, that out of 52 subjects dissected by M. Grisolle, not one had suffered from pulmonary inflammation, (pleurisy existed in a quarter of the cases.) But if there be uterine phlebitis, then pneumonia occurs as in all other descriptions of venous inflammation. To continue our figures: intercurrent pneumonia appeared in

	$\frac{1}{7}$	of all cases of	continued fever.
	$\frac{1}{6}$	,,	acute affection of the brain.
	$\frac{1}{4}$	,,	pulmonary tubercles.
	$\frac{1}{4}$	,,	diseases of the heart.
About $\frac{1}{6}$ or $\frac{1}{7}$		,,	cancerous disease of viscera; organic disease of liver, especially cirrhosis—Bright's disease, &c.

In the majority of cases, the development of secondary pneumonia is not explicable by any direct action exercised by the primary disease. In such cases, whether the disease be acute or chronic, there are two conditions which coexist in the majority of instances, but may exist independently of each other—these are febrile movement and weakness. To these M. Grisolle looks as the principal agents in the production of secondary pneumonia. For the influence of age, sex, &c. (points numerically considered) we must refer to the author's pages.

The simultaneous existence of bronchitis and pneumonia, the latter originally appearing as a consequence of the former, is a point which has given rise to diversity of opinion. Laennec was on the whole disposed to believe such union extremely rare; we have known an eminent auscultator affirm that he had never observed it: on the other hand it is matter of belief with some that the extension of inflammation from the lining membrane of the smaller and capillary bronchi to the air-cells is a very common phenomenon. M. Grisolle gives the result of his experience upon the subject numerically. Of 201 patients, from whom he was enabled to obtain positive and satisfactory information on the subject, seventy-six had coughed for a greater or less length of time before the development of symptoms clearly referrible to pneumonia. Of these seventy-six, twenty-three had laboured under the chronic form of bronchitis for years; in the remaining fifty-three the bronchial affection had,

at the most, existed three or four weeks at the time of pneumonic seizure. The proportion of cases thus preceded seemed somewhat greater to M. Grisolle in males than in females, and was, generally speaking, greater in direct proportion to the age of the subjects; almost all the pneumonic patients aged between fifty and seventy suffered from acute or chronic bronchitis. The frequency of chronic bronchitis among subjects of this age tends to lessen very greatly the importance of and our confidence in the inference which the above facts would, on first impression, appear to warrant.

The author has found, by careful investigation, that about one quarter of pneumonic patients between the ages of sixteen and sixty have precursory symptoms; that is, functional disturbances preceding those originating in the lungs themselves. This calculation refers to primary pneumonia; such phenomena are wanting on the contrary in the greater number of cases where the disease is secondary.

Symptomatology. *Pain.* We pass over the chapter upon the symptoms of invasion, and turn to that devoted to the symptoms of the established malady. Twenty-nine subjects only out of 301 escaped pain in the side, and the diagnostic value of this symptom is strengthened by the fact that it appeared in 161 out of 182 patients during the first twelve hours; seventeen of the remaining twenty-one subjects felt it before the end of the first day; the four others from the second to the fourth days. The seat of the pain in 175 cases was as follows:

At the nipple	in 89 cases.
At the base of the chest, about the 6th or 7th rib	39
Laterally at the extremity of a line perpendicular to the nipple, but 10 or 12 centimeters distant from this	13
Over the entire antero-lateral surface	10
Within the nipple, more or less close to the sternum	6
Posteriorly and especially in the infra-spinata fossa	5
In the axilla	2
In the supra-mammary region	2
In one of the hypochondria	4
In the flank	1
In the loins	1
In the supra-spinata fossa	1

In about one fifth of his cases M. Grisolle found that the seat of the pain corresponded precisely with that of the inflammation in the pulmonary substance; in one seventh of these the former was close to the latter; in the others the points in question were widely distant from each other. In no case however did the inflammation and pain occupy different sides of the chest; certain authors have, it is true, related cases where this amount of difference in the locality of the pain and inflammation was observed, but M. Grisolle inclines to believe that the pain may in such cases have been rheumatismal, or actually attended with subjacent pneumonia which had escaped detection.

Dyspnœa. Extreme acceleration of the respiration is not a fatal symptom: of two subjects in whom the number of respirations was from 75 to 80 per minute, one recovered. The following table founded on the comparison of two groups of sixteen patients, nearly alike in respect of age and the severity of their inflammation, but differing by the presence or complete absence of pain, shows that there is far from being any direct relation between the amount of local suffering and dyspnœa.

Frequency of Respiration.	Patients with violent pain in the side. 16	Patients having had no pain or scarcely any pain in the side. 16
From 20 to 30 per minute.	2	2
30 to 40	5	4
40 to 50	7	8
50 to 60	2	2

It has been said by MM. Bouillaud, Andral, Hourmann, and Déchambre, &c. that pneumonia of the upper rather than of the lower lobes was especially productive of intense dyspnœa. Forty-four cases, judiciously selected, from their similarity in other respects, for the purposes of comparison show, as follows, that the decision of the writers named is not perfectly just.

Number of Respirations.	22 Cases in pneumonia of the upper half.	22 Cases in pneumonia of the lower half.
From 20 to 30 per minute.	4	3
30 to 40	7	8
40 to 50	9	9
50 to 52	2	2

The influence so clearly supplied by this table is confirmed by the fact, that of six subjects who died under pneumonia of the upper lobes, not one had breathed more than forty-four times in a minute; whereas in four of six subjects who died with inflammation of the lower division of the organ, the respiration was from 52 to 64, in the other two 48 per minute. As a general proposition, the number of respirations was 4 or 5 in the minute greater in fatal cases than in those of recovery.

Sputa. Into the author's examination of the colour, viscidity, and other characters of the pneumonic sputum we need not enter, but as the characteristic expectoration of the disease appears to derive new diagnostic importance from the earliness of its appearance, as exhibited in the following table, we extract this. In 131 cases the characteristic sputa were observed for the first time:

On the first day in	45 cases.	On the sixth day in	6 cases.
second	31	seventh	5
third	14	eighth	2
fourth	14	eleventh	2
fifth	11	twelfth	1

The rusty sputum is that which is most frequently observed as the primitive form, for out of sixty-six cases there were

35 in which the sputa were at first rusty.
25 in which they were of the colour of apricots or barley-sugar.
6 in which they were sanguinolent.

In twenty cases the expectoration was perfectly white, opaque and catarrhal; fourteen of them occurred during the influenza of 1837, a proportion showing that epidemic constitution has some influence in inducing this anomalous species of expectoration.

Dilatation of the chest. M. Grisolle has observed two cases furnishing strong evidence, conclusive indeed, of the occurrence of dilatation of the walls of the thorax during pneumonia. One of them refers to a

male aged 24, affected with inflammation of the summit of the right lung of moderate intensity. On the fifth day, when the patient was seen for the first time, the conformation of the chest was remarkable from the complete absence of supra and infra-clavicular depression on the right side; on the seventh day some advance having been made towards resolution, the hollow in both situations commenced to be more apparent, and on the ninth it was as well marked on this as on the opposite side.

Auscultatory signs. We have in another place (vol. IX. p. 312) adverted to the opinions held by certain observers, our author among the number, respecting the occurrence of appreciable respiratory change in pneumonia prior to the supervention of crepitant ronchus. The feebleness of respiration which we stated to constitute, according to M. Grisolle, the earliest physical sign of pneumonia, appears to have been detected in five of seven cases observed during the first few hours after the patient's seizure. It disappears rapidly, as it was only to be detected in one sixteeenth of the subjects on the second day, in the one twenty-fifth at the end of the third. He has never observed the puerile respiration announced by Dr. Stokes as the *primary* auscultatory phenomenon of the disease, but he is willing to admit that it may in some cases be the harbinger of the others, inasmuch as he has frequently detected the phenomenon in spots subsequently attacked with inflammation.

Crepitant ronchus. The importance of the true crepitant ronchus is now generally understood; its pathognomonic character, when distinctly developed, admitted. The precisely characteristic crepitation, however, does not always occur, a fact which cannot be too forcibly impressed on those still in their noviciate in the study of physical signs. In 34 cases observed by M. Grisolle, the primary crepitation resembled more or less the subcrepitation of capillary bronchitis. The diagnosis under such circumstances might be sufficiently obscure; in the cases referred to the presence of the peculiar sputa of pneumonia left no room for hesitation. The existence of the ronchus in a limited and circumscribed space would justly arouse suspicion as to its cause, inasmuch as the subcrepitation of capillary bronchitis exists at the bases of both lungs. This exceptional species of ronchus was chiefly observed in subjects who had passed their fiftieth year, a circumstance giving weight to the statement of Hourmann and Déchambre, respecting the extreme rarity of true crepitation in aged subjects. During the influenza of 1837, M. Grisolle observed with very great care eighteen cases of pneumonia, not one of which presented the pathognomonic form of ronchus.

Bronchial respiration. In the majority of cases the passage from the first to the second stage is rather sudden, and the exchange of crepitation for bronchial respiration proportionally rapid. But

"In some patients," observes M. Grisolle, "the transition from the former to the latter of these conditions is not so rapid, and there is then heard, if not in all the spots affected, at least in some of them, a peculiar sound, perfectly characteristic, and which I shall term *sarsenet sound* (bruit de taffetas.) It impresses the ear with the sensation of a piece of new sarsenet being torn; or in some instances resembles more closely the crumpling of a silk gown. This sound never exists except in the inspiration. It is often necessary to make the patient cough, or at least take a deep breath in order to make it audible. In the majority of cases the *sarsenet sound* coexists with fine dry crepitation. It may be observed in all points of the chest; however it is much the most common in the

axilla, opposite the anterior border of the lung and in the outer part of the scapular fossa. I look upon this sound as a sign of hepatization, and so far as I can judge from a single fact, I believe that it characterizes induration still limited to the surface of the lung. In 1835 an old woman died in the clinical wards with pneumonia of the lower lobe of the lung; the last day of her life, I detected towards the anterior border of the axilla, and in the greater part of the supra-mammary region of the same side, a dry rough sound mingled with crepitation, and which several persons, as well as myself, compared to the crumpling of sarsenet or parchment. I still heard it distinctly when the patient was *in extremis.* The following day I examined most particularly the part of the lung where I had heard the sound and found red induration occupying a very thin stratum of the pulmonary parenchyma."

Bronchophony. In his observations upon the bronchophony of hepatization, the author remarks that "in some persons whose voice is naturally acute and shrill, true ægophony may be heard, without there existing any effusion: this I have chiefly ascertained in aged subjects." This we extract, not for its novelty, (we have more than once in this Journal had occasion to make a similar remark, founded on our own experience,) but because the fact is one of no mean importance, while it is one of which the beginners in auscultation seem almost universally determined to resist the cognizance.

Puerile respiration. M. Grisolle objects to the prevalent notion that puerile respiration is a constant phenomenon in that portion of the pulmonary substance which remains unaffected, while the share of the organ, actually diseased, is considerable. Of thirty-six subjects in whom the condition of the respiration on the healthy side was carefully noted, three only had puerile murmur; in six others this phenomenon existed on the diseased side in the immediate vicinity of the inflamed tissue, and in two of them the puerile successively passed into bronchial respiration. On the other hand this observer finds that a weakened respiratory murmur is much more frequent in the vicinity of inflamed portions of lungs. One hundred and four patients having accurately circumscribed pneumonia, were carefully examined by M. Grisolle, and in fifty of these he found the respiration more or less weakened around the diseased part. The extent of surface in which this diminution was discoverable varied; it was commonly limited to from fifteen to eighteen centimeters, but may occupy a much larger space, and even prevail in an entire lung. The sound may be somewhat less clear on percussion opposite the portion of lung affording a weakened murmur, or it may not be at all affected.

Fremitus. In the pages of this Journal we have already stated our want of confidence in the signs putatively deducible from the condition of the thoracic fremitus in different diseases, (vol. IX. p. 331.) In the following passage we find evidence confirmative of the justness of our scepticism: "I have," observes M. Grisolle, "studied the phenomenon of vibration of the thoracic walls in the adult subjects affected with pneumonia in its second stage; out of these ten subjects eight presented complete absence of thoracic vibration on both sides of the chest, or if it existed at all it was equally marked on the healthy and diseased sides. In two cases it appeared to me that the vibration was a little more marked opposite the hepatized parts, but the difference was inconsiderable; besides, as the disease was on the right side, it is possible this

depended on a normal difference." Here the phenomenon was manifestly studied without preconceived opinion, and the result was precisely such as we affirm it will always be, when the physician divests himself of theoretical fancy, and busies himself alone with his actual perceptions. The truth is, that the mechanism of the phenomena in the healthy, as in the diseased state is but ill, if at all, understood.

We pass over a very considerable number of pages wherein the symptomatology of the disease is examined with scrupulous minuteness, and which are evidently the result of an infinite toil, because there is little in them that can be esteemed positively new. Here, nevertheless, must the physician turn, who is desirous of knowing all that can be known in the existing state of the science on the subject in question.

Crises. We turned with no small interest to M. Grisolle's chapter on crises and critical days, in the hope of finding, from the enquiries of so diligent and enlightened an observer, a satisfactory statement of the disputes to which the matter has so long given rise. He has sufficiently exposed the fallacy of the doctrine of critical days, (a fallacy we have methodically denounced in this Journal whenever an opportunity has occurred,) but leaves the question of crises very much as he found it. His result is, that in one fourth of the cases of pneumonia terminating by recovery, either at the period at which the amelioration commenced, or a little time previous to this, certain vital changes, and especially "humoral evacuations" were observable; but whether the so-called "crisis" is the cause or the effect of the change he pretends not to decide. But the truth is, the question needs not the decision of M. Grisolle.

Termination. This author is, like his predecessors, unable to indicate any trustworthy sign or signs, wherefrom the passage from the second stage of pneumonia to the third may be predicated. Upon the value of the observations of Stokes and Fournet, of which the germ may be found (as usual) in Laennec, respecting the supervention of a mucous ronchus, the impressions from his own experience appear to be rather vacillating and uncertain. Thus he tells us, "that in eight subjects in whom one lobe was in a state of complete gray hepatization without any mixture of the second stage, humid large crepitation was discovered shortly before death; but this rhonchus had existed the preceding days also, when the lung was probably only in the state of red induration. The bubbles had perhaps during the closing days acquired an increase in point of size and humidity; but these shades were too delicate to justify diagnostic inferences. Besides, similar phenomena were discovered in these subjects who died while the disease was in the second stage." This seems to settle the matter; however, M. Grisolle "admits that where a given portion of lung had for several days been the seat of blowing respiration, without mixture of crepitation, large humid crackling or actually mucous ronchus had become audible, purulent infiltration of that portion of the lung might be *suspected;* even if the blowing respiration have diminished or disappeared. *But* in order to entitle these stethoscopic characters to such diagnostic force, it is absolutely necessary that they coincide with an exasperation of the general symptoms." M. Grisolle bids fair for the fame of the Lord Eldon of auscultators. The point is an important one and is worth further investigation.

Suppuration. Of the almost certainly fatal termination of the dis-

ease when the third stage is established, little doubt is entertained; some believe that death is a *sine quâ non*. Yet both this opinion and the reverse are manifestly incapable of being proved so long as we are ignorant of the *signs* announcing the passage from the second to the third stage. M. Grisolle has seen these cases terminate in recovery, wherein all the *rational* signs of the suppurative process had appeared.

Gangrene. The extreme rarity with which gangrene of the lung originates in active inflammation of the organ, a point noticed by J. Frank, and forcibly dwelt on by Laennec, is now commonly acknowledged; yet it is not even yet sufficiently a matter of conviction with the many. The evidence furnished by M. Grisolle on this head is important. "I have had occasion," he remarks, "to see nine or ten cases of pulmonary gangrene, and in no single instance did the lesion succeed to a perfectly characterized pneumonia. Of the 305 cases of pneumonia analysed in this work, not one ended in gangrene; and of seventy cases of pulmonary gangrene recorded in the Medical Journals during the last twenty-five years, there are at the most five which can be fairly pointed to as the sequence of pneumonia." Nor is it possible to determine what may in these rare instances have been the cause of the unusual termination: to the age of the patients it cannot be ascribed, nor to the immediate cause of the disease, for both varied extremely. Nothing can be more clearly established than that the chances of gangrenous disease are not directly as the violence of the inflammation: death occurred from the seventeenth to the twenty-fourth day in the cases thus terminating—a duration indicating instead of unusual activity, a certain amount—almost of torpor, in the inflammatory process.

Chronic pneumonia. Yet more rare, and rarest of all, as a termination of acute pneumonia, is subsidence into the chronic state. Of such termination M. Grisolle has seen one distinct example—many practitioners pass through a long career without witnessing even one. The subject of this case had not been bled, and had partaken of a large quantity of mulled wine during the acute stage; whether the passive and active mal-treatment may have contributed to the event observed it is of course impossible to determine. M. Grisolle's experience of chronic pneumonia was too limited to allow him to give a general view of its symptomatology, and he states that his search was vain—how readily do we believe him! —for available materials in the periodical and other literature of the day.

Complications. The author's chapter on the complications of pneumonia exhibits the same evidences of patient industry as its predecessors.

Pleurisy. Of 247 cases of pneumonia thirty-one became complicated with pleurisy; the application of this word being restricted to cases in which the pleuritic effusion is sufficiently extensive to produce distinct physical signs. Nearly two thirds of these thirty-one individuals were from eighteen to thirty years of age, and all the others, except two, were under fifty. The quantity of fluid effused was, with a single exception in the inverse ratio of the extent of the parenchymatous inflammation; hepatized and transformed into a hard resisting mass, the lung necessarily interferes with the accumulation of fluid. And in harmony with this fact is another: in four cases the pleuritic effusion supervened, or greatly increased at the period of resolution of the pneumonia. In proportion as the fever diminished or disappeared; when the sputa ceased to be

rusty; when pain was no longer felt; the physical signs, in these cases, appeared to announce extension of the disease: percussion disclosed a more extensive and complete dulness; crepitation had ceased, and was in one case replaced by bronchial respiration and bronchophony. Here is evidently a puzzling concurrence of circumstances: the abruptness with which the increase in dulness has supervened, compared with the improving condition of the local and general symptoms, furnish the only guide to correct comprehension of the case.

It is important in respect of prognosis to fix satisfactorily the justness of Laennec's notion, that the compression exercised on the lung by pleuritic fluid exercises a beneficial influence on the pulmonary inflammation, both as regards extent and degree; especially as the same doctrine is inculcated by Dr. Williams in the words, "the effusion of the pleura by its pressure modifies the effect of the inflammation of the lung." (Lectures, p. 113.) M. Grisolle's experience is completely at variance with this doctrine; "the pleural effusion appears neither to moderate nor set a limit to the parenchymatous inflammation." Still further he finds that the presence of fluid in the pleura is without influence of any notable kind on the duration of the main disease. The existence of an effusion which is developed simultaneously with the affection of the parenchyma, modifies in nowise the anatomical characters of this; it is well known that when pneumonia attacks a lung long surrounded by pleuritic effusion, the characters of the lesions are peculiar; M. Grisolle, with Laennec, describes them under the title of carnification.

Pneumothorax. M. Grisolle examines the cases of alleged pneumothorax supervening in the course of pneumonia, published by Drs. Graves, Hudson, and Stokes, but neglects to state the explanation of the error of those observers (in respect of the *cause* of the tympanitic sound detected under percussion), tendered some years past by Dr. Williams, and now commonly recognized as the just one. Dr. Williams has in truth shown, that the production of tracheal or amphoric sound on percussion from consolidation of the upper lobe of the lungs is extremely common. (Lectures, p. 102, &c.)

Bronchitis. Fifty-eight of 240 patients had distinct stethoscopic signs of bronchitis, a complication occurring with seven times greater frequency in males than females.

Heart-disease. Of fifty-eight patients twelve presented various morbid phenomena connected with the heart and great vessels. In three of these twelve cases the affection was pericarditis, fatal in two instances. In eight patients (exclusive of those seized with pericarditis) a modification in the quality of the sounds of the heart was detected. In two of these cases the sounds were noisy, loud, and resembling the auriculo-metallic sound; in the others obscure and stifled, without however appearing to be produced at a greater distance from the surface than usual. In one half of these cases the impulse was augmented; there was an appearance of increased size of the organ in two instances; no single subject suffered from pain at the precordial region or from palpitation. The dulness of sound existing in these cases M. Grisolle, with M. Bouillaud and others, believes dependent on the presence of coagula adhering to and interfering with the performance of the functions of the valves.

Jaundice. Of 277 pneumonic subjects 20 were affected with jaun-

dice. This occurred with extreme rarity in individuals past the age of 50; was proportionally four times more frequent in males than in females; was most common in spring and summer; occurred in sixteen cases of right and only four of left pneumonia (the frequency of pneumonia generally is, however, we have seen, considerably greater on the former than on the latter side;) attended with equal frequency inflammation of the lower and upper lobes; never preceded the pulmonary disease in order of development; never acquired any very notable degree of severity; and in six sevenths of the cases in which it occurred constituted the only symptom indicative of derangement of the biliary apparatus.

Delirium. Uniting his own experience with that of MM. Louis, Andral, and Briquet, M. Grisolle concludes that delirium occurs in a proportion varying from one eighth to one eleventh of pneumonic cases; it is of more frequent occurrence in fatal cases than in those of recovery, and is therefore of unfavorable augury. M. Grisolle's cases, as those of MM. Andral and Briquet, show in opposition to the assertion of M. Bouillaud, that pneumonia of the summit is, to say the least, not more frequently attended with delirium than that of the base of the organ. The ill influence of double pneumonia in this direction is, however, manifest; one fourth of the subjects, both of whose lungs were involved in the disease, had delirium. In nearly one third of the cases attended by this symptom, the anatomical characters of recent inflammation of the membranes (purulent infiltration of the subarachnoid cellular tissue, &c.) were present; in the remaining two thirds the state of the brain and membranes in nowise accounted for the functional disorder. Neither was there any evident or constant relationship between the extent of pulmonary lesions and the violence of the delirium, nor between the degree of the febrile reaction and the cerebral phenomena. Hence M. Grisolle dissents from the doctrine laid down by Louis respecting the influence of febrile action in the production of the delirium of acute affections. (vid. Brit. and For. Med. Rev., vol. XII. p. 40.) He is persuaded that the idiosyncrasies of individuals, their habits and their moral condition at the period of seizure, must play an important part in its evolution, inclines to ascribe it in certain typhoid and malignant pneumoniæ to "infection" of the fluids, and believes that in many cases—here we go heartily along with him—a plausible explanation of the delirium cannot be assigned.

The various *forms* of pneumonia are considered in a learned and interesting chapter: the bilious, the typhoid, the catarrhal, the intermittent and remittent, the latent, the rheumatic, the gouty, the verminous, the puerperal and the traumatic are separately examined and most lucidly distinguished. With this announcement of the contents of this section of the work we are forced to content ourselves.

Of all acute diseases which endanger life, pneumonia is perhaps that which produces least emaciation; such is the result of M. Grisolle's observation in adults, and in persons of advanced age. The proposition will perhaps apply to children even the most youthful.

Phthisis. It has been laid down as a principle by MM. Barth and Roger, that if crepitant ronchus be heard at the summit of the chest, *exclusively in front*, and febrile action be present, the pneumonia thus indicated is probably tuberculous. This principle is based on the fact, that idiopathic inflammation of the superior lobe attacks the posterior

much earlier than the anterior half of the organ; that, consequently, the physical signs of the disease are almost invariably first perceptible posteriorly, and when the inflammation reaches the front of the lung they continue to be more marked at its posterior aspect. M. Grisolle admits these facts, but considers them insufficient to warrant the opinion of his countrymen. The motives of his demurrer are, that he has seen two subjects in whom the stethoscopic phenomena of pneumonia were limited for several days to the subclavicular region, yet there was no evidence that these individuals were tuberculous. Besides in ten patients who presented the rational or physical signs of phthisis, and who were subsequently seized with pneumonia, this affection pursued the same course as in ordinary cases; that is to say, the auscultatory signs were first detected in the supra and infra-spinatæ fossæ, or in the axilla, and thence spread to the clavicle. Our author concludes that the position of MM. Barth and Roger would be more tenable did it simply affirm that crepitant ronchus audible at the anterior or posterior part of the summit of the lung, limited to a small space, and continuing for a long while unchanged in degree, may lead us to suspect the existence of tubercles, inasmuch as idiopathic pneumonia affects a different mode of progress and development.

Diagnosis. Of the *diagnostic* importance of bronchial respiration (for we have made our way to the chapter on diagnosis), M. Grisolle professes a different opinion from that held by some of his countrymen. M. Andral, for example, affirms that the existence of blowing respiration furnishes an excellent means of distinguishing pneumonia from pleurisy. MM. Barth and Roger maintain that blowing murmurs are heard with such extreme rarity in pleurisy, that when they are discovered something more than simple pleurisy is to be thought of. M. Grisolle, on the contrary, has found blowing respiration and bronchophony in half the cases of pleurisy he has carefully observed (upwards of 50); but in one fifth only of them did these phenomena present their pneumonic characters. English observers seem to coincide with M. Grisolle. Dr. Stokes says that "bronchial respiration is by no means uncommon in pleuritic effusion, and may be observed in the most recent as well as in chronic cases." (Diseases of the Chest, p. 494.) Dr. Williams writes, "when œgophony is most distinct, it is often coupled with bronchial respiration." (Lectures, p. 89.) Dr. Walshe admits the occurrence of blowing respiration in pleurisy, but believes it comparatively uncommon, and distinguishable from its never, so far as his experience goes, acquiring the intensity of the blowing murmurs of hepatization; "it appears distant and subdued, and is besides heard over a very limited extent of surface." (Cyclopædia of Surgery, art. Empyema, p. 109.) This statement of Dr. Walshe agrees accurately with the account given by M. Grisolle of the characters of the more usual species of bronchial respiration occurring in pleuritic effusion, but seems to make no provision for the actually pneumonic condition of the phenomenon observed by the French author in one fifth of his pleuritic cases. Comparatively speaking, this difference is unimportant; the essential point is to determine whether bronchial respiration be really present in some cases or not, and the weight of testimony is evidently for the affirmative.

Prognosis. The subject of prognosis is handled with much skill by

M. Grisolle; the completeness of the chapter being indicated by its being divided into nineteen heads. The influence of early or tardy administration of medical aid is better shown by the following table than it could be in any other possible way:

The mortality among patients admitted the first 3 days				$\frac{1}{13}$
,,	,,	,,	4th day	$\frac{1}{8}$
,,	,,	,,	5th	$\frac{1}{6}$
,,	,,	,,	6th	$\frac{1}{4}$
,,	,,	,,	7th	$\frac{1}{3}$
,,	,,	,,	8th	$\frac{1}{2}$
,,	,,	,,	9th	$\frac{1}{3}$
,,	,,	,,	10th	$\frac{1}{3}$

Delay here is truly death; a fact which had been sufficiently established in this country, in France, and in the United States in respect of typhoid fever, but of which no numerical demonstration, as regards pneumonia, had hitherto appeared. The explanation of this is well and feelingly given by M. Grisolle:

"We must not here alone consider the mere absence of all active treatment, whereby the disease is allowed to follow its course unmolested, but take into account the fact that patients of the indigent classes are for the most part exposed to anti-hygienic conditions more or less baneful. Many of them continue to walk about or to work during the first days of the affection; many of them force themselves to eat without feeling the inclination; some of them, deprived of sufficient clothing or inhabiting imperfectly closed rooms, are exposed for several days to continual cold. Finally, we must not forget the fatigue endured by such poor patients as are obliged to come to the hospital on foot, from a greater or less distance, exposed to all the inclemency of a perfidious climate."

Treatment. Nearly 200 pages, upwards of a fourth part of the volume, is, by a singular anomaly in French medical literature, devoted to the subject of treatment. Were it only to commemorate this signal departure on the part of a French writer from established custom—a custom which we had begun to deplore as incorrigibly engrafted on the literary system of France—we should feel disposed to notice at some length M. Grisolle's therapeutical lucubrations. But the truth is, they have more solid claims upon the attention; they are the result of much observation, of close study, and patient examination of cases under every possible aspect: all this by a writer evidently free from prejudice, whose stedfast object, the attainment of truth, is stamped in legible characters on each page of his enquiry.

Bloodletting. Venesection naturally engages the author's attention first, and he commences with the question,

1. *Is bleeding useful in pneumonia?* In other words, is it better to bleed pneumonic patients, or to leave their malady to the natural course? a query which, as M. Grisolle observes, may to some persons appear to savour not a little of absurdity. Nevertheless, it is sufficiently obvious that unless we have ascertained the mean mortality of the disease when left to itself, we are without a standard whereby to test the real value of bleeding or of any other given mode of treatment. And it is especially necessary to raise the question at Paris, where it is notorious the late M. Biett treated every case of pneumonia that appeared in his wards

during an entire year by emollient drinks and linseed poultices, and could point, it is alleged, in vindication of his *practice*, to a low rate of mortality; where, again, it is notorious that at the present hour the accomplished slayer of dogs, the Chesterfield of vivisectors, M. Magendie, does little else than rival the inaction of his late *confrère* of St. Louis. The humanity and conscience of our author made him shrink from the application of the expectant treatment in cases of any severity, but having, while engaged in these researches, met with eleven cases in which the inflammation was of very limited extent and attended with mild general reaction, he simply prescribed repose and rigid abstinence, demulcent drinks, and in some cases a gentle laxative. The patients were admitted, on an average, on the fourth day of the disease; in nine among them the lung was hepatized, in twenty the inflammation was in, and never passed beyond, the first stage. These cases are compared with a series of thirteen others, four only of which had not already reached the stage of hepatization; the general symptoms were mild, the patients still young, and they were all bled twice, locally or generally, on an average the fourth day. Now M. Grisolle does not content himself with the mere affirmation that benefit accrued from the use of the lancet, but he shows in what manner that benefit acted, and above all, its amount. We shall place beside each other, in order to render the contrast stronger, the results obtained in the two series of cases.

11 cases of mild pneumonia, not treated by bleeding.	13 cases of mild pneumonia; bleeding performed on an average on the 4th day.
The Characteristic Sputa.	
Continued till the 9th day.	Ceased before the end of the 6th day; about 48 hours after venesection.
Pain in the Side.	
Although diminished at the end of 4 or 5 days, never disappeared before the 8th, and frequently continued to the 20th, 25th, and 27th days. Its mean duration = 15 days.	Invariably relieved by bleeding, whether this was general or local; disappeared completely on from the 2d to the 12th day, and on an average on the 8th day.
Febrile Reaction.	
Ceased about the 10th day; convalescence commenced the 11th or 12th day.	Had ceased abruptly at the end of the 7th day; then commenced convalescence, which was thoroughly established 24 hours after.
Auscultatory Phenomena.	
Commenced to decrease at the end of the 2d week, that is 4 or 5 days after the cessation of fever, but continued to be more or less manifest till from the 22d to the 30th day, that is, the lung was still more or less impermeable.	Began to decrease with the cessation of the fever, that is the 7th day, and in the subjects carefully examined till their departure from the hospital, the lung had completely recovered its permeability, on an average on the 12th day.

We have seldom recorded the results of experience with more thorough satisfaction than we feel in committing these to our sheet; and for this simple reason, that we ourselves (and the multitudes who doubtless have acted like us) find herein not only the justification, but the demonstrated utility of the practice of bleeding (unless some peculiar contraindication exist), even in the slightest case marked by the pathognomonic rhonchus or sputa. It is scarcely necessary to declare that

we were convinced of our correctness in invariably ordering loss of blood; that is, as well convinced as we could be from the general impression derived from our experience, unaided by its accurate analysis. Yet we must honestly confess that we have sometimes had our misgivings as to the wisdom of the course, and been almost inclined to yield to the pressing solicitations of patients and of relatives, that the lancet might be spared. We shall be sterner bleeders in future.

The table given at page 402, representing the relative mortality among patients admitted at different periods of the disease, seems to involve, (and does so in truth, though not to the degree appearing at first sight,) as a necessity, the utility of treatment of some kind. However, it must be remembered, as we have already had occasion to say, that those who delay their entry into hospital not only do not receive positive aid, but are frequently submitted to what may be called negative treatment of the worst kind.

2. *Should we bleed in all cases of pneumonia without exception?* It has been said, and is taught in some quarters, that venesection is dangerous at the two extremes of life, in early infancy and in extreme old age; that at these periods a collapse, from which recovery shall be impossible, is to be dreaded as the natural sequence of loss of blood. Idle apprehensions! Experience proves that not only may bleeding be performed upon both classes of subjects without risk, but with manifest advantage. If we have a settled conviction in therapeutics, it is, that the fatal issue of pneumonia may be averted even in the first week of extra-uterine existence (we have, as we believe, twice so averted it ourselves) by abstraction of blood. And is advanced age *per se* a sufficient motive for abstaining from bloodletting? Even as little as in the newborn infant. Morgagni drew blood with success from nonagenarians; five of six subjects, who had passed their seventieth year, were sufficiently vigorous to bear venesection with advantage. To insist upon such cases is needless, for they are of frequent occurrence. On the other hand, a constitution deteriorated by misery, by bad nourishment, by grief, excess, or previous disease, at whatever age it exist, furnishes a formal contraindication to bleeding. While certain epidemic constitutions prevail, it is a well-established fact that venesection is inadmissible, and this is also, with rare exceptions, the case, according to M. Grisolle, with secondary pneumonia of every species.

M. Grisolle labours to remove the popular prejudice respecting the danger of bloodletting in women upon the point of or actually menstruating. "The flow of the catamenia, no matter in what manner it be advancing, constitutes no obstacle to bloodletting, provided the existing symptoms proclaim its utility." He cites Delamotte and J. Frank in favour of his opinion; the latter states that bleeding never suppressed either catamenia or lochia, when practised for the relief of inflammation; and M. Grisolle observes that in those pneumonic patients who had their menses while in the hospital, the discharge flowed about as abundantly and as long as in the state of health. M. Grisolle is equally strong in his assertion of the propriety of bleeding pregnant women, where symptoms require it.

3. *Should we bleed at all periods and stages of pneumonia?* M. Grisolle rightly maintains that no period of a pneumonia is too advanced

for bleeding, provided the indication for loss of blood be thoroughly established. He has himself prescribed, and known M. Chomel to prescribe, venesection on the twelfth, fifteenth, and seventeenth days of the malady. But although we be justified in bleeding at any period of the disease, it is certain (as was first shown by M. Louis several years since) that the utility of the measure is much greater when it is had recourse to at an early than a late period. M. Louis found that patients bled during the first four days recover, *cæteris paribus*, four or five days earlier than those bled at a more advanced stage of the affection. The large series of cases observed in four successive years by M. Grisolle, gave a precisely similar result, even to the mean number of days gained by the early bloodletting.

M. Andral believes that the existence of the third stage of the disease does not always contraindicate the use of the lancet, inasmuch as the third often coexists with the first two stages, and these may still be counteracted by bloodletting. M. Grisolle well observes upon this, that the problem of the propriety of bleeding under these circumstances is one which in the existing state of knowledge cannot be resolved, for a reason already mentioned, our inability to diagnosticate with sufficient certainty the actual existence of the third stage. Be that as it will, such facts as the following lead M. Grisolle to hold a contrary opinion to M. Andral: three patients in whom the inflammation had certainly reached the stage of suppuration, (as proved, we presume, by post-mortem examination,) but the state of whose pulse did not precisely contraindicate bleeding, were bled to ten or twelve ounces; they fell almost immediately into a state of collapse, which terminated by death in four, six, and eight hours. Another subject who was in a complete state of collapse seemed to rally under tartar emetic and a blister; the improvement tempted the medical attendant to draw twelve ounces of blood: in three hours the patient had ceased to live.

4. *How and where should we bleed?* With the response to this query we need not detain the reader, as it presents nothing remarkable.

5. *With what frequency should bleeding be practised, and at what intervals should successive bleedings be performed?* We shall not follow M. Grisolle through his sketch of the practice of the great practitioners of the last century, and of the modern Italian school, but turn at once to the critical sifting to which he submits the notorious "*formula des saignées coup sur coup*," which M. Bouillaud has by systematic laudation forced upon the attention of French practitioners. The treatment by repeated and large bleedings following each other at short intervals, we need scarcely say, no more *originates* with M. Bouillaud than with any practitioner in the metropolis. But upon a people who, like the good Parisians, have commonly no inkling of what is done beyond the limit of their own land, it is not a very marvellous achievement to succeed in palming any notion new to France as a thorough novelty. M. Bouillaud performed this small wonder. The new treatment of the animated professor was applauded uproariously, his inventive genius was the burden of all conversation on the benches of the Académie Royale; beardless striplings stood mute with admiration, as "one bleeding more" was ruthlessly ordered for the patient who even then seemed to have scarce a little ounce of blood in his frame. But what

matter if the patients disappeared; the raw *externe* had got his hand in with the lancet, and such was his skill at the Clinical School of La Charité, that a *saignée blanche* was there unknown. After a time, however, even Parisians discovered that their vivacious therapeutist was not an *inventor:* the more serious question, was he an *improver*, remained to be answered. Of course, according to himself he was this improver; nay more, *seipso judice*, he figured as the greatest public benefactor France had produced for heaven knows how long, as by his "formula" the lives of, we forget how many, thousand citizens would yearly be saved to the state. Sober men, however they were at first staggered by the confidence with which all this was proclaimed, soon began to desire a close examination of the evidence on which these pæans were sung, and in M. Grisolle they have found a scrutator likely to lighten the weight of M. Bouillaud's claims to the civic crown.

Suppose a case of pneumonia of moderate extent and severity in the first or, at most, the second stage in an adult of ordinary strength and constitution, the "formula" according to which M. Bouillaud would treat him is as follows:

"*First day.* Bleeding to four 'palettes'* in the morning; to three or four in the evening. Between these, thirty leeches to the side, or three 'palettes' of blood to be removed by cupping.

"*Second day.* Bleeding to four 'palettes;' if the pain in the side continue, the leeches to be repeated.

"*Third day.* If the pneumonia be still present, bleeding to the amount of three or four 'palettes' must without hesitation be performed.

"*Fourth day.* Should the disease, which is rare, not have yet yielded, bleeding may again be practised; but it is commonly better to renounce bloodletting and apply a large blister to the side.

"*Fifth and sixth days.* Nothing remains now to be done but to watch the state of the patient attentively. In the most common cases, resolution rapidly takes place, and some appetite already begins to be felt. In some exceptional cases, a sort of recrudescence of the malady may arise, and the physician may be obliged to return, but with more reserve and soberness to bloodletting. M. Bouillaud is of opinion that it is now or never that tartar emetic might be had recourse to with advantage." (Grisolle, p. 582.)

Here then M. Bouillaud measures out *à priori* the quantity of blood to be lost by every individual seized with pneumonia; the extent of the disease, observes M. Grisolle, the stamina of the subject, and other conditions which are commonly deemed of some importance, are not thought of. M. Bouillaud affirms, it is true, that on the contrary he *does* regard all circumstances which may and ought to modify the treatment; but is this affirmation justified by his practice? A man, aged 36, "worn out by saccharine diabetes," (M. Bouillaud himself speaks,) reduced to a state of considerable emaciation, was seized with adynamic pneumonia, came under the care of M. Bouillaud, and forthwith underwent the necessary depletions in the shape of these bleedings of twelve ounces each. The patient lived till the seventh day. Is this having regard to all the circumstances of individual cases? But M. Bouillaud's sole regret is that he did not bleed the patient more!

But M. Bouillaud has not confined himself to a mere general assertion of the superiority of his method of treatment; he has, upon various oc-

* The palette is equal to four ounces.

casions, published numerical statements of the results of his practice, "arranged," according to M. Grisolle, "in a manner well calculated to lead the unwary into error." A selection, for example, is made of 56 cases of pneumonia, some of them of mild character and terminating favorably under the use of emollients only, 2 only ending fatally; in other words, a mortality of 1 in 28 of those attacked. Here is very evidently a most extraordinarily low rate of mortality. But in the first place, as M. Grisolle remarks, one third of these patients recovered without M. Bouillaud's formula; 35 patients, of whom 2 died, accordingly remain for the credit of the formula: still a degree of success sufficiently remarkable. But now comes the notable part of the story. After having pompously announced a mortality of 1 in 28, M. Bouillaud finds himself obliged, at the close of the very same paper, to give as his definitive result 1 death in $8\frac{3}{4}$ cases. "Oh! what a falling off was there!" Still even this proportion of 1 in $8\frac{3}{4}$ signifies by no means a despicable share of success in the treatment of pulmonary inflammation. Unfortunately even from this less prominent vantage-ground the inexorable M. Grisolle drives his victim; he shows that even this result may be accounted for in a different way than by the efficacy of the *saignées coup sur coup.* We proceed with M. Grisolle's demonstration of this.

The last Memoir published by M. Bouillaud in the papers of the Royal Academy of Medicine (nominally by one of his pupils, M. Pelletan) refers to 75 cases, wherein are included those already referred to. Of these, 49 only were treated by the formula; 6 of the 49 died, or about 1 in 8, not $8\frac{3}{4}$, as appeared from taking all the cases indiscriminately. But this result (far from an unfavorable one) is evidently due to circumstances wholly unconnected with the treatment. 1st. It is known that pneumonia, treated in the ordinary mode, destroys scarcely one seventh of those attacked whose age is between thirty and forty. Now M. Bouillaud's patients had scarcely attained the mean age of thirty-three; what marvel, then, that one eighth only of them succumbed? The simple circumstance of the age of the patients not only suffices to explain the apparently favorable character of the results at La Charité, but accounts, according to M. Grisolle, for the "impunity with which M. Bouillaud has employed his method; the tenacity of life found in young subjects can alone have counterbalanced the evil effects of venesection carried to extremes."

And, again, M. Bouillaud has been to no small extent favoured by the unadvanced condition of the disease when his patients came under his care: in sixteen of the forty-nine subjects the affection had not passed the first stage, or had only reached the point of transition from the first to the second; in ten subjects the first two stages were combined; in thirteen only was hepatization perfectly established.

There is, further, a third and very important circumstance bearing in the same direction, connected with the conditions of M. Bouillaud's patients. Pneumonia is a much more fatal disease in females than in males;* now of the cases under consideration those furnished by the former sex form scarcely one twelfth of the whole number. No misogynist living can

* From an extensive series of cases observed by various persons and in various quarters, M. Grisolle (p. 522,) obtains the inference that the mortality of females exceeds that of males by $\frac{1}{3}$ or $\frac{1}{2}$, that is among those actually attacked with pneumonia.

have better cause to congratulate himself on the absence of the softer sex, than M. Bouillaud on the smallness of its contributions to his pneumonic categories.

It is tolerably clear, then, that M. Bouillaud does not save more lives than his brethren. French Malthuses may dismiss the apprehensions of a glutted population, which the first accounts of the *saignées coup sur coup* might well have inspired. Even Malthus himself would scarcely have been ruffled by the elaborately tiny savings of M. Bouillaud. But M. Bouillaud is not quite baffled yet. He does not alone vaunt his method as saving a greater number of lives than any other,—"it diminishes by more than one half the duration of the disease." And how does the reader suppose this result was obtained? In two ways. First, M. Bouillaud published a series of cases, the duration of which was estimated not from the commencement of the attack, but from the day of admission into hospital, whether this were the third, sixth, eighth, or tenth of the patient's illness! Here was an easy receipt for the getting up of rapid cures. The cases which had lasted but about nine days, when their duration was measured *à la Bouillaud*, suddenly found their length increased to fifteen or more when estimated in the old fashioned mode. Secondly, obliged to admit the absurdity of this manner of calculation, where his advantage was gained at the *outset* of the disease, M. Bouillaud bethought him of its *close;* and lo! a new set of cases appears, wherein he indemnifies himself by his manner of settling the period of convalescence. This he considers to commence when the "characteristic signs of the disease and the febrile action have *almost wholly disappeared.*" Now M. Louis dates convalescence "*three days at least after the cessation of fever;*" and yet by an unaccountable oversight (for such we must presume it to be) M. Bouillaud affirms that "he fixes the commencement of convalescence at the same time as M. Louis."

So much for the *Saignées coup sur coup.* To some other points connected with their curative omnipotence we may hereafter return. Meanwhile we congratulate M. Grisolle upon the able and uncompromising manner in which he has fathomed and exposed the depths of this most serious mischief.

Of the results obtained by the author himself we shall now give a general survey. It is necessary to premise that he divides his cases into two series,—one in which venesection was performed while the disease was in the first stage, another in which the signs of hepatization were evident when the treatment was undertaken. The first series is composed of fifty patients, who were bled from one to five times, to a mean amount of two pounds four ounces, within the first twenty-four or forty hours of their sojourn in hospital: five of these cases ended fatally. In the second series are comprised 182 patients, (143 men, 39 women,) of a mean age of thirty-five years; these subjects were bled from one to six times, and lost from eight ounces to eight pounds of blood, the mean quantity being three pounds: thirty-two of these subjects died. M. Bouillaud's cases, analysed in respect of the severity and duration of the chief symptoms after the treatment had been put in force, and compared with M. Grisolle's, furnish the plainest proof that excessive bloodletting does not ensure the least diminution in the duration of the symptoms. And it is therefore fair to proclaim, in the language of M. Grisolle, that

"M. Bouillaud having drawn blood from his patients to a mean amount of four pounds five ounces, did not obtain more favorable results in any single point of view, than I whose patients lost on an average scarcely two pounds and a half. So that it is clear M. Bouillaud caused each of his patients to lose a mean quantity of two pounds of blood without the very least utility." But is this all? Is such useless and profuse expenditure of the vital fluid to be considered merely a negation? Or is it to be esteemed positively and seriously baneful? That it is the latter no sane person can doubt.

Tartar emetic. We pass to the treatment of pneumonia by tartar emetic in large doses. The chapter on this subject opens with an abstract of the labours of preceding authors; this is well compiled, but the merits of Marryatt, who first prescribed the medicine in contra-stimulant doses are not mentioned: probably M. Grisolle never heard of him or them. Of the *history* of tartar emetic in its application to the treatment of pneumonia we have already spoken in this Journal, (vol. I, p. 415.) M. Grisolle's own achievements with the salt shall be our theme on the present occasion. The cases, upon which his researches bear, treated with tartar emetic in large doses, are 154 in number; he divides them into three series. A. 44 cases treated exclusively with tartar emetic, without the previous or associated use of any other mode of active medication. B. 80 cases in which the exhibition of tartar emetic was preceded by one or more general or local bleedings, these having produced no modification in the course of the disease or its principal symptoms. In none of these patients were the powers of life sufficiently sunken, to render the further loss of blood really inadmissible. C. 30 patients, who had been largely bled and nevertheless their malady was gaining ground; the state of the strength and pulse being such as to preclude the possibility of further venesection.

Series A. 44 patients; all seriously affected.
8 women; 36 males.
Age between 15 and 71; mean age 37.
20 of weak constitution; 19 of medium strength; 9 vigorous.
When the treatment was commenced, the disease
had reached the stage of hepatization in 35 subjects;
was still mainly in the first stage in 9.

In all these cases the disease was of sufficiently severe character to make it impossible to predict the issue; the pulse had generally less resistance than usual, but was never of a kind formally to contraindicate bleeding. The treatment was commenced between the first and tenth days of the disease; on an average on the fourth. The quantity of the medicine taken on the first day was 6 grains, and was subsequently made to vary between 6 and 12 grains. The time it was taken varied between one and ten days, and averaged three and a half days. All these patients, without exception, and no matter what the issue of the case was destined to be, underwent the primary effects of the medicine: they had abundant stools and vomiting, of which the former predominated over the latter. Fourteen of 36 individuals, in whose cases M. Grisolle was obliged to continue the exhibition of the medicine for several days, presented a perfect state of tolerance upon the third or fourth day. Six of the 44 cases thus treated terminated fatally,—a mortality of not quite one in seven. Those patients who died were placed under more unfavorable

conditions than the others; their mean age exceeded 50, the treatment was not commenced on an average until after the fifth day, and one of them had such violent delirium that the disease was rather guessed than diagnosticated during life, and the tartarized antimony administered for two days only. The duration and course of the principal symptoms under this mode of treatment are next considered; but we must pass on to

Series B, comprises 80 patients, whose age varied from 16 to 70, and averaged 35½. Venesection, for the most part repeated twice or thrice, had been insufficient to arrest the disease. The tartar-emetic treatment was generally commenced on the sixth or seventh day, and the medicine exhibited in the same manner as in the former series of cases, during a period varying from one to nine days, and averaging four. The mean quantity of the salt taken by each patient was 36 grains. Three patients only presented the phenomenon of tolerance from the first. Of the entire series of 80, 10 only died, a favorable result to be in part ascribed, as M. Grisolle fails not to note, to the mean age—under 36—of the patients.

In both these series of cases tartar emetic appears to have had a most obvious influence in causing rapid amelioration of the principal symptoms of the disease. In the 70 cases of recovery belonging to the series B, however, convalescence was only reestablished on the fourteenth day, that is two days later than the mean date of convalescence in patients who recovered under venesection only. A similar result was obtained by M. Louis some years since. But this result does not really prove that the medicine exercised an ill influence on the progress of the disease. We must remember that at the period tartar emetic was first administered, several bleedings had been practised without effect, the disease being on the increase in spite of them; and further, the first bleeding had been performed one day later in M. Grisolle's, two days later in M. Louis' patients treated with tartarised antimony, than in those who took none of this medicine. The result in the series A, also, distinctly disproves the charge that tartar emetic can have any influence in prolonging the duration of the malady.

Series C. 30 patients, of a mean age 49. The disease had already existed ten days; the possibility of further bloodletting was exhausted; the pulse soft and depressible; the patients in a state of prostration, and at least one half of them in a hopeless condition. Of these 30 patients, 18, or nearly two thirds, died; more than half of this number perished during the first two days of treatment. This result testifies, according to M. Grisolle, to the inefficacy of bleeding much more than of tartar emetic; for the former was extensively employed at an early period (on an average on the fourth day) and yet it failed in arresting the onward march of the affection.

M. Grisolle continues the subject of the tartar-emetic treatment by sections upon its modes of administration; upon its primary effects; and upon tolerance; upon the contraindications to its employment; the accidents which may follow its very abundant ingestion; and finally its *modus operandi*. The curative powers of kermes, white oxide of antimony, acetate of lead, digitalis, and hydrocyanic acid are severally discussed; and the treatment by calomel and opium dismissed with a statement that the author knows nothing of it personally, and an earnest appeal to English physicians for *proofs* of its alleged efficacy.

Blisters. To the *juvantia*, hygienic and medicinal, we are next conducted; and in the article on blisters find some observations with which

we are disposed to tarry for a moment. It results from the analysis of 38 cases (12 fatal, 26 cases of recovery,) in which blisters were applied to the chest, that the symptoms were rarely mitigated immediately after their action, and that in the few instances in which such change occurred it was by no means certainly ascribable thereto. It was matter of demonstration that blistering did not lessen the duration of the disease. Here are precisely the opinions we have advocated in this Journal on the subject of the influence of blisters. It is just to add that M. Grisolle believes his number of cases insufficient to prove absolutely the "powerlessness and perfect inutility of blisters"—the admission we insert as a salvo for the consciences of those who, in veneration of routine, heap epispastics on every thorax they come in contact with.

But our space fails, and we find ourselves compelled to hasten to M. Grisolle's conclusion—and our own. It appears that of a total number of 304 patients observed by this physician, of a mean age of 38 years, 43 died, or something less than one in seven. Of this number of patients 80 only were submitted to the mode of treatment which M. Grisolle's analysis proves to be the best, namely, general bleeding, repeated until the pulse looses its hardness and resistance; local bleeding by leeches, or cupping, for the removal of pain; and the exhibition of tartar emetic—this medicine being commenced with before the pulse has failed to such an amount as to preclude the possibility of further bloodletting. We believe that this is fundamentally and mainly the practice of the enlightened physicians of Great Britain at the present day. "The care," observes M. Grisolle, in his closing words, "with which I have studied the question of treatment gives me motive for hope that I have not erred; and I think I may affirm, in the language of Sydenham, that the treatment I recommend is that which I should wish applied in my own case, were I seized with the malady of which I have now traced the history."

It is impossible to have studied M. Grisolle's volume without feeling strong admiration for the industry and sound judgment exhibited in its composition. The author cannot, it is true, lay claim to the discovery of any striking novelty; but he may congratulate himself on having performed a far more useful task than the promulgation of a few new notions. He has accumulated the experiences of his predecessors, subjected them to a searching and impartial criticism, separated the true from the false, substantiated the solid, and scattered to the winds many empty opinions of contemporary observers by a logical appreciation of his own experience. All this he has done with unswerving good faith. If in closing the volume we must, not to lose our reputation for good critics, cavil, we would express our regret that the works of English writers have not been more carefully studied in the *originals.* M. Grisolle, for example, appears to know the treatise of Dr. Stokes but by extracts in the Parisian journals—yet even thus known he finds in it just theme for praise. If garbled fragments, often ill selected and carelessly translated, are rife with the most valuable information, the importance of mastering the entire treatise should surely not have been overlooked by M. Grisolle. Further, the volume we have reviewed is so monstrously prolix that its readers must be limited to the Herculeses of literature alone—and to the professional critic. But as a book of reference, especially as illustrative of French opinion, the work cannot be pronounced less than invaluable.

Art. VIII.

Madness, or the Maniac's Hall; a Poem, in Seven Cantos. By the Author of the "Diary of a Solitaire."—*London*, 1841. 8vo, pp. 302.

Our critical labours seldom extend into the department of poetry, but the subject of the work before us brings it legitimately within our domain. The work itself demands notice as bearing the stamp of a powerful and elevated imagination, and of a highly-cultivated intellect, exercised under very peculiar circumstances, upon one of the most interesting topics within the range of medicine. Its history is singularly interesting, the poem having been wholly composed when the author was in the seclusion of a private lunatic asylum. From a letter written to the author by Mr. Southey, we transcribe the following passages, to which, for many reasons, much interest attaches itself:

"The subject is copious and important, but is it not of too exciting a nature for you? Your object should be what I proposed to myself as the one thing needful to intellectual self-contentment, five and thirty years ago, when I borrowed from an old Spaniard for my motto the words *in labore quies*. Any employment that agitates you must be so far injurious. Can you trust yourself for proceeding with it only while you find it beneficial, and lay it aside as soon as it affects you strongly? Long ago I was warned by experience never to proceed continuously with any work which I had in hand, after I had begun to dream of it; and this is the reason why I have always several works in progress."

We fear that this distinguished man overlooked a caution no less important than that which led him to withdraw from topics when they began to encroach on his good night's sleep; namely, that the brain will not bear continued labour, however varied, without exacting some penalty, sooner or later to be paid. If such labour is persevered in, the energies of mental life become prematurely exhausted, and the rest of intellectual existence is bound in shallows.

The deep and true feeling which animates the author of the poem is everywhere visible. His soul has evidently been sharply touched, but "to fine issues;" his destiny rough-hewed, but shaped to useful ends. In freedom, and in mental peace, which we trust he will long enjoy, and amidst the various comforts of social life, he retains the tenderest pity for those yet afflicted as he was once afflicted; and thus attempts in his own words,

> "The vivid transcript of those mournful days,
> When first this form, inured to madmen's ways,
> Was plunged within the breathings of dispair;
> Taught by the aid of sympathy's soft lays,
> The power to read of other hearts the care,
> And feel, e'en now, the chains which countless sufferers wear."

The poet begins by lamenting that other bards have left his subject unsung. He acknowledges the truth of Shakspeare's individual sketches, but still says:

> "Nor he, nor Pope, nor Dryden, e'er reveal'd,
> In deathless verse the pangs that long combine,
> Those mourning ones from human ken conceal'd,
> To dole their weary hours, where days no pleasure yield."
>
> *Canto* 1. *St.* 9.

None, he says, have touched upon those

> "mansions drear,
> That bore the emblem of an earthly hell,
> Where sympathetic tear of relatives ne'er fell."
>
> *Canto* I. *St.* 11.

Few or none indeed had the opportunity of doing so with any useful effect. To them, as to the public in those days, the moping idiot and the madman gay were but the objects of a passing curiosity. The chained lunatic was left to crown himself with straw, the monarch of a dreary solitude, broken only by the curious or frightened gaze of visitors, admitted perhaps on payment of a penny to see the collection, and who carried away with them doleful impressions of dirt and obscenity, and of strong *keepers* (the very term seems to have been borrowed from the lion-ward of the tower) armed with scourges. The scene is now changed; light has beamed into the maniac's cell, and the scourges have gone. A few heavy shadows may remain, but these also must soon disappear. Recollecting the fierce resistance of those who in the struggle out of which this light was evolved, preferred the darkness, we read with impressive interest the following stanzas in the author's second canto, touching on matters no less important than *Seclusion*, *The character of Attendants*, and *Restraint*. Let it be remembered that we have here no competitor for the fame of novelty, no advocate eager to be esteemed humane, no superintendent anxious for distinction, no private owner of a lunatic house desirous to consult his own interests. We have a witness from the grave of the lunatic's cell itself; one who has felt and known the results of what he reprobates, and whose testimony thus acquires a genuine and even a solemn interest.

IX.

Seclusion, then,—but plenteous streams of light
Pouring with radiant beam the window through,
Must mark thy castle fair; with groves bedight
And meads of softest green, and sprightly view
Of distant scenes;—a village spire or two,
And aught that can with sanity unite
A healthier look at life. Thus wisely do,
And well thy labours fortune shall requite
With well-earn'd gold; and time, the lost one's mental sight.

X.

But add to these—and seek them from afar—
Attendants on thy will, for task design'd
To watch and wait on all: * *
* * * *
But 'tis not selfish ones that e'er shall find
'Mid education's sons that fitting store
Of knowledge and of life with love entwined,
Which opes of memory's crowded cells each door,
By whom thou mayst a patient's long lost joys restore.
* * * *

XII.

He that with anger meets a madman's wrath,
Adds to the flame his judgment should subdue;
None, save a fool, would brave a lion's path,
When, 'mid the pangs of hunger, full in view
A heifer stands—but would that jaw eschew:

So when the rising flood of passion swells
And in the restless brain to mem'ry true
Each pictured scene some real suff'ring tells
To him not less than Eden's joys or fancy's hells;

XIII.

Choose then, oh thou, whose sovereign presence reigns
Amid the halls, the chambers, and the grounds
Of this thy chosen seat—him who nor chains
Nor force delights in; but whose love surrounds
Each sorrowing one—and to the utmost bounds
Of prudent safety, would in mercy throw
The gentlest veil—and whilst a fool impounds
His victims dread in bondage and in woe,
He, to his aid would bid each milder accent flow.

Canto II.

It is proper, however, to inform the reader that the poet, near the conclusion of his notes (p. 299), concurs in an opinion expressed, unfortunately we think, by Mr. Tuke of York, "that there are cases in which, under the most favorable management, we should best consult the feelings of the patient, as well as the comfort of his companions, by the application of mechanical means of restraint." No opinion can be more hurtful and discouraging than this, in which we apprehend that the advantages ascribed to restraint are really due to the seclusion accompanying it; or if not, are believed in because the effects of a proper system of care and watchfulness, and the application of the various resources which ingenuity suggests to meet the difficulties of different cases, have not been witnessed. A means so sure to be abused as mechanical restraint should not be tolerated if not indispensable. The attempts hitherto made to prove it indispensable, even in particular instances, have certainly not been satisfactory. There are still asylums in which it is thought indispensable during the night *in every case*. It is the sole and grand resource of indolence.

There is a note appended to the stanzas above quoted (p. 219), in which the author says, that of all the subjects connected with the proper treatment of insanity, the importance of securing suitable attendants has most impressed itself upon his mind. "Nothing," he says, "is more calculated to disgust and increase the excitement of a convalescent and sensitive mind, than to be subject to the low and necessarily ignorant talk of even the most civil, and for their station in life the best informed of the class almost invariably chosen to perform the important duties of attendance and companionship." He adds, that "although unwilling to dwell much upon his own sufferings, he could a tale unfold of the horrors of being subject to the reckless, rude, and barbarous ignorance of attendants, that would make his readers shudder." Of this we entertain no doubt. In the best managed asylums, nothing but constant vigilance can prevent neglect or unkind treatment of the patients by some of the attendants. Some of them are always inclined to lapse into indolence, and this indolence is a fertile source of cruelty as well as of neglect.

The suffering inflicted on a sensitive lunatic, heretofore accustomed to good society, when he finds himself on his partial recovery limited to the companionship of a common attendant, but especially by the rude and jocose familiarity, or it may be the rougher behaviour of the low and igno-

rant keepers belonging to ill-conducted private lunatic establishments, is still more strongly alluded to in canto iv. The remuneration given to the upper attendants in the better-managed private houses is sufficient, one would think, to secure the services of young persons of education and attainments much superior to what are possessed by those now usually filling such situations; and we are convinced that many a governess and many a tutor, now pining in the solitary school-room of private families, distracted with spoiled children, and depressed by "the proud man's contumely," would be much more happily and even more usefully placed if they accepted such situations, the duties of which are by no means ignoble. Both parties would be benefited; the teachers, transformed into attendants, would enjoy more consideration, more liberty, more variety; and the patients consigned to their care would reap the advantage of their greater resources, their more varied conversation, and their accomplishments. The following stanzas point to the present evil arrangements in these respects, whilst they present a shadow of terrors which might be unfit for ampler description, and afford the relief of contrast by attracting the attention to an asylum in which the principles of humanity are kept constantly in view.

v.

Adjacent to proud London's ancient walls,
These limbs, to fearful custody consign'd,
Endur'd a conflict that the soul appals,
E'en in the lapse of twenty years;—nor mind
Of Herculean strength could, thus confin'd,
Re-breathe uninjur'd liberty's sweet air;
The vigorous frame, to ruffian hands assign'd,
In vain could aid the intellect's right care;
And bad to worse he came, while lingering sadly there.

vi.

What else could spring from chains and dungeons dire?

* * * *

vii.

All vain the effort, to constrain by force
The impetuous mind, or stay its fierce career;
And conscious then that 'twere a vain resource,
'Mid anger's fitful tempests, thus to steer,
Some guardian angel, (ah! to memory dear!)
In mercy pointed to where Ouse's stream
With gentle current winds that terrace near,
On which Sol's earliest and resplendent beam
Shines o'er York's vale with peaceful ray and rest supreme.

viii.

Her various aid—the walk, the sight of all
That city, famed for art's refining grace,
Can give to him whose vagrant footsteps fall
Its streets and hills among;—and friends had place
In the attempt to gild the rich-fraught face
Of novelty.

Canto iv.

We confess that we think the kind of evidence we are now placing before the reader of more than ordinary importance; and we therefore give insertion to a *note* on the above passages, in which the author speaks with all the plainness of prose on the same subject:

"Whoever took sufficient interest in the painful subject of public and private asylums, to glance over the result of a parliamentary enquiry many years ago

in the shape of voluminous evidence from medical and other gentlemen connected with these establishments, might have seen enough to shake the strongest nerve, and to raise many an aspiration of the deepest sympathy at the narration on oath of the abhorrent cruelties then inflicted upon the suffering and neglected inmates of such places as Old Bedlam, St. Luke's, and not a few private establishments, amongst which the one referred to in the text was included. It was mainly by the individual and persevering exertions of Samuel Tuke, of York, that the long indulged misdeeds of its county asylum were brought to light, and the present reformed state of things there secured. Acts of parliament, subsequent to the enquiry above referred to, have greatly changed the whole face of the subject; and owing to the salutary restraint under which all such places are kept by the periodical visits of appointed magistrates, it is scarcely possible that England can again go back to the worse than inquisition-like barbarities of thirty years ago. If the author of the present volume had not, after a life of strange and fearful vicissitude, arrived at the same point of feeling, and entire reliance on the immutable wisdom of Providence implied in that line of the poet Young,

'For all I bless thee, most for the severe,'

it would have been difficult for him to have recalled his own sufferings at B —— G —— house, without exciting more than ordinary indignation against its proprietors. But alas! the system, then all but unusual, would shield any enormities. Suffice it to say that the hand that now writes, with its fellow-hand, and with the feet, have been chained for days and weeks together in solitary confinement; and occasionally, also, by a longer chain, to a staple in the floor in the common day-room of some twenty or thirty other patients. So also, at night, have the metal handcuffs been used, where now under similar circumstances every species of coercion would be altogether abandoned.

"The utter want of classification, too, and the abhorrent scenes to which the eye was frequently witness in the treatment of other cases, rendered the chances of recovery tenfold greater [less]; but of course, as the history of nineteen asylums in twenty will prove, the longer a patient remained, the more profitable was he to the proprietor.

"The author, for several months, continued getting worse and worse; that is, more impatient and excited, and his friends were at length compelled to try a change; and at the Friends' Retreat at York, in less than a fortnight after his removal, he was restored, though his recovery was followed by a long period of fearful depression.

"He has often found it extort expressions of surprise, when, though rarely done, he has alluded to these past scenes of his painful history, to find that he so distinctly remembered the facts of which he was induced to speak. It is this circumstance, reader, that induces the author still to doubt whether his own case has always been in the ordinary sense of the word, altogether one of positive insanity. He is, however, willing to admit, that in that period of afflictive dispensation, an asylum was the most welcome as well as salutary retreat from the gaze of an unsympathising world.

"Should the present volume prove, by the blessing of Providence, in any degree the feeble instrument of attracting a more vivid and decided attention to the subject generally, the author will feel that his sufferings have not been permitted to befal him in vain. Assuredly, on this point of memory and self-cognizance of all that has passed, both at the house near London, at York, and at D ——, the author's recollection is, in the minutest points, clear and vivid in the extreme; although, since the former, more than twenty years have elapsed." (*Note*, p. 252.)

We have given this note without omissions, and several parts of it will give rise in many readers to obvious reflections, which we shall not therefore express. But the dreadful picture it gives of the habitual restraint that must have prevailed in an asylum in which so intelligent a patient as

the author was so severely coerced, dwells forcibly on the mind. *The hands and the feet chained for days and weeks together!* or *a longer chain to a staple in the floor of the day-room!* Such were the substitutes for kind watching, or for simple and not unwelcome seclusion. The sensitiveness on the part of those labouring under impaired mind, and the strong recollection they preserve of much or all that is said and done in their presence, are, we fear, too little thought of. They are perhaps pretty generally admitted as existing, but they are forgotten when the insane are to be controlled.

In the following stanzas the author alludes to the value of well-timed medicine; most likely to be neglected, we apprehend, where the universal remedy of restraint is held in most esteem, and also to the important subjects of employment and amusements. On all these matters we cannot too often remind the reader that the poet speaks, not as a speculative theorist or benevolent enthusiast, (terms occasionally applied to the promoters of the humane system,) but as one who has *felt* the ills which he describes, and all the sweet and all the sorrowful influences of good and bad treatment.

XIV.

Nor yet, forgetful of that needful skill
Which health the body's waning strength requires,
Neglect not med'cine to provide; and fill
Thy stores with drugs and draught that rest inspires.
* * * *

XV.

* * But neither physic's aid
Nor diet treatment, thou mayst here enforce,
Will health restore, if maniacs are not made—
Aye, urged by means resistless—to walk the shade,
Or strike the bounding ball, or use the arms
In labours healthful, and with hoe or spade
Clear well the recreant weed, or fence from harms
The tender plant, and screen th' exotic's embryo charms.
* * * *

XVIII.

Next to the active walk, fail not to store
Thy table with amusements, such as men
May well indulge!—the chequer'd board—and floor
Mark'd with its points for bowling; and again
The level surface of the smooth green pen
In which the ivory globe with impulse sure
First strikes the red ball's martial side, and then
Each after other thus the balls endure
The well-urged blow, and reach the number'd sockets pure.

XIX.

Yes! soothing game, the "bagatelle board" hight,
Full many an hour of weariness and woe,
This anger'd mind, 'mid scenes of tempting light
Has spent in striking with no skilless blow
The errant ball of ivory—and so
Has 'scaped of ills a sadly lengthen'd train,
That else had bid its wearying moments flow
'Mong retrospections drear: thus then would fain
The maddening bosom seek a brief retreat from pain.

XX.

Nor, were the bard possessed of such retreat,
Should long the billiard-table wait his call.

* * * *

XXII.

These various games, or such as these, we need,
To rouse the dormant sense, and stir its fires;
And though 'tis not in mortal hands to speed
A cure, 'tis well if sport some joy inspires:
And oh! how needful 'tis that hope conspires
With calmer patience to subdue the vein
Of passion's blood excited;—when retires
Sweet sympathy, and self is left to gain
Its bitter portion of defeat, distrust, and pain. *Canto* II.

The remarks of the poet, who is one of the Society of Friends, on religious services, and their effects on the insane, are very striking. There is scarcely any subject more embarrassing, we believe, to superintendents and chaplains than this. Sometimes the subject is treated of with too much enthusiasm by very well-meaning persons, and doubtless sometimes with too much apathy. But that public religious services are a source of comfort and consolation to some of the insane, and of at least innocent enjoyment to many, is unquestionable. It is yet too early to say how far and with what results religious attentions are available in particular instances. Nothing can determine this very important point but the careful observation of judicious chaplains after several years' experience. It is scarcely credible that in one of the great lunatic asylums in London there is said to be no chaplain; and that even a chapel has not yet been thought of; an asylum, too, in which there are many well-educated patients.

XXV.

'Tis not for bards to sing of creeds or forms,
Or mark the line which, in a house like this,
'Twere well to take—since real love conforms
To all that Heaven assigns—nor aught amiss
Deems he the pray'rful language, though not his,
Which in that house his gracious God prepares;
In truth of heart alone consists our bliss—
And Catholic or Quaker, this is theirs
Who join in peace and love th' accustom'd household prayers.

* * * *

XXVII.

Oh! 'twere a sin surpassing all beside,
If 'mid the regions of distorted minds,
Nor prayer, nor hymn, to soften erring pride,
Rose on the memory which sorrow binds
In darkening chains, and madness only finds;—
If 'mid disease and sin's unconscious deeds
Hope dwelt not here—while through this vale man winds
His faltering way to death,—and silent pleads
His Saviour's blood, and there his glorious pardon reads. *Canto* II.

The author of the poem makes a feeling allusion in one part of it to the effects of music upon him; although with an apology to the respected shades of Fox and Penn, as music is among the things which the society discountenances. To expect permanent effects from musical sounds in the case of the insane would be no more reasonable than to look for durable impressions from it upon the sound mind; but it often soothes and sometimes diverts them; and in certain instances seems to create a sudden revulsion in the thoughts, insomuch that intractable patients will become silent when it is unexpectedly heard, and shed tears. The mention of it by the author in the following stanza is extremely interesting:

XXVII.

He only knoweth, Lord of heaven and earth,
How this wrapt soul with listening love hath wept
In secret praise to him who gave it birth;
And e'er, amid each threat'ning danger, kept
The wavering heart! And what, if overstept
The joys which thee, dear Fox, or noble PENN,
Would cause to start, and from such strains have leapt
Your prison-bounds! Oh! grant that, yet again,
Silence may soothe the spirit, nor ask the songs of men. *Canto* III.

We have been led to notice this work not as being perfect as a poetical composition, or as one of which all the views meet our approbation. We regard it as containing testimony to be set against the asserted anxiety of insane persons to be put in restraint, which has been one of the arguments used by those long habituated to the old methods of coercion. Neither in this work, nor in that of Mr. Perceval, formerly noticed by us, nor in the reminiscences of Robert Hall, nor in the recent remarkable publication of Mr. Paternoster, do we find any weak partiality for handcuffs, any regretful tears on account of the disuse of leglocks, any sweet associations treasured up with the memory of strait-waistcoats and chains. All the partiality, all the favour and affection, and all the tears, if any be shed, are on the side, not of those who wore the restraints but of those who put them on. If the question related to a mode of punishment, the testimony of the punished might be objected to. The country justice does not permit his reverence for the treadmill to be weakened by hearing that those whom he sends to climb that everlasting stair entertain peculiar objections to that mode of exercise. He does not mean it to be a source of pleasure; his singleness of view excludes all ideas but that of punishing the delinquent. The question of restraint is wholly different; it relates to a means that is or ought to be remedial by its action on the mind.

The notes to the poem are numerous and desultory. He must, however, be an ill-tempered reader who would quarrel with what in the composition the author avows to have given him much pleasure. It is curious to see how a strong leaning to certain religious feelings tinges the worthy poet's views of numerous subjects which we believe it in his kind nature to regard with far less severity. If we might venture to address a word of remonstrance and warning at parting, it would be to eschew all that encourages a hostile and bristling state of mind in relation to occupations, recreations, and even opinions, followed, partaken in, or maintained by so many excellent persons as to justify some doubt of their utter unworthiness. Such a state is as unfavorable to the due balance of the mental faculties as it is to that peace of the affections the loss of which is, in such a large majority of cases, the cause of that delicate balance being disturbed. Nor do we think those parts of the poem the most felicitous in which these harsher indications prevail. The muse seems to have looked askance upon them. We would presume to remind the poet of the juster as well as milder breathings of a great predecessor in the poet's art, who, abjuring the ready condemnation of all who differed from him in opinion, makes this a part of his prayer:

"If I am right, thy grace impart,
Still in the right to stay;
If I am wrong, oh! teach my heart
To find that better way."

Art. IX.

Essai sur les Effets produits dans le Corps Humain par la Luxation congénitale et accidentelle non reduite du Femur. Par G. Vrolik, m.d. &c.—*Amsterdam*, 1839. 4to, pp. 30, pl. 4.

Essay on the Effects produced in the Human Body by unreduced Congenital and Accidental Dislocations of the Femur. By G. Vrolik, m.d. &c.—*Amsterdam*, 1839. 4to, pp. 30, pl. 4.

The records of surgery contain very few observations respecting the changes consequent on dislocations of the femur, nor are these few described with sufficient accuracy and minuteness to render them really valuable. This brief memoir, from the pen of the most renowned pathological anatomist in Holland, furnishes more and better information on the subject than any other work that we have been able to consult; and we regret to be obliged to pass by the very accurate descriptions of the cases of dislocation which he has dissected, and to limit our extracts to the immediate subject of the memoir, namely, the ulterior changes which follow these displacements.

In consequence of an unreduced dislocation of the thigh on to the ilium, he says (p. 10), the vertical position of the body is necessarily disturbed, because in this posture, and in walking, the centre of gravity of the deformed side is no longer coincident with the centre of motion, that is, with the position of the head of the femur in its articulation. The patient, finding this difficulty, endeavours to remedy it by a complete displacement of the relative position of the parts. When at rest he throws the weight of the body on the healthy limb, and thus the hip of that side becomes habitually lower than that of the diseased side, contrary to what one might expect. The shortening of the long-dislocated limb, therefore, is partly real and partly apparent; the former in consequence of the actual displacement of the femur, the latter in consequence of the elevation of that side of the pelvis.

Again, not only are the raised heel and the in-turned toe of the dislocated limb peculiar, but the whole form of the foot is altered; the instep is higher, the hollow of the sole is greater, the os calcis is longer, and its posterior tuberosity has a remarkable projection downwards. The elevation of the heel therefore is by no means an exact index of the amount of shortening of the limb, but is the result of a combination of those distinct circumstances, namely, the dislocation, the elevation of that side of the pelvis, and the prolongation downwards of the os calcis.

As soon as one side of the pelvis drops, the direction of the vertebral column alters, the lumbar vertebræ turn from that side, the dorsal become curved in the opposite direction, and (though less evidently) there is a slight repetition of the same phenomena in the cervical portion of the spine. At the same time the last lumbar vertebra presses with more than usual force upon the top of the sacrum, and produces an unnatural projection of the promontory, and a greater than ordinary inclination downwards of the pelvic axis. The sacrum loses its vertical position between the ilia; the symphysis pubis is no longer exactly opposite the middle of the sacrum; the antero-posterior diameter of the pelvis assumes an oblique direction from side to side, and the whole pelvis be-

comes oblique* and unsymmetrical, the diseased side being larger than the healthy.

Nor is this all; the shoulders are thrown down to restore the balance of the body lost by the obliquity of the pelvis; the upper extremities seem lengthened to attain the same purpose, and are more than naturally depressed towards the thighs.

In the pelvis itself, whether a new joint is formed or not, the old cotyloid cavity undergoes the same changes. It always assumes the form of an isosceles triangle, whose base is represented by the notch at its anterior and inferior border; nothing remains of either the cotyloid ligament or the cartilage which formerly lined the greater part of the cavity; all is rude, irregular, and filled up by fat. The cause of the assumption of this triangular form seems to be as follows: when the head of the femur is forced out of the acetabulum, the capsular ligament in the part which retains its attachments both to the ilium and to the femur, is rendered extremely tense; and this force, continually acting, tends to produce a change of form in the bone by pressing the superior and inferior walls of the acetabulum towards each other. At the same time also the psoas magnus and iliacus internus on the upper border of the cavity, and the obturator externus on its inferior and outer border, being put on the stretch and frequently acting, tend in the same way to produce a change in the form of the acetabulum; not indeed by the direct influence of their pressure, but by the change which it produces in the direction of the nutritive process.

After the displacement of the head of the femur, it moves freely between the glutei, in contact with the surface of the ilium; and hence the formation of a new acetabulum. The vessels of the periosteum of the ilium, or perhaps of the ilium itself after its periosteum is worn through, throw out plastic lymph, which forms the basis of the new cavity, and in which first cartilage and then bone is deposited. This however takes place only when the capsule has been so torn as to permit the head of the femur to pass out of it and come in contact with the surface of the ilium. When this has not occurred, and the capsule has intervened between the two bones, then, if any impression at all be made in the ilium, it is only by a yielding and bending inwards of its ala, or by a gradual absorption of its external layers; but never, as far as Dr. Vrolik (who has specimens of all these changes) has seen, by a production of new bone.

The whole of the os innominatum also undergoes a change of form. The action of the gluteus medius being almost entirely destroyed, and its antagonist, the iliacus internus, being stretched and enabled by its position to act with more than usual power, the ilium, deprived of the force exerted upon it by the contractions of the former, is constrained to follow the action of the latter; and yielding to this force, it bends inwards, and instead of having an oblique direction from without inwards, it becomes almost vertical. In like manner and at the same time, the action of the muscles on its exterior being lost, the lines and

* This remark affords important evidence on the subject of the oblique position of the pelvis described by Naegele, whose work we reviewed in Vol. XI. p. 167; it casts additional doubt on all his cases in which the state of the spine was unknown.

processes for their attachment are gradually effaced; its internal surface acquires a concave form, and the brim of the pelvis is rounded off so as to render the boundary between the two pelvic cavities indistinct. The crest of the ilium also loses almost all its curve and becomes nearly rectilinear; and the notch between the superior and inferior anterior spines is partially effaced and appears longer than that on the opposite side.

The whole of the os innominatum becomes thinner and lighter. The horizontal ramus of the os pubis is longer than that on the opposite side, and at its junction with the ilium it presents a deep groove where the iliacus and psoas have played over it with unusual force. The tuber ischii is turned outwards; and its ramus assumes the same direction, drawn thither by the altered action of the adductor magnus, the obturator internus, the gemelli, and the quadratus femoris, all of which, in the new position of the femur, pass much more obliquely upwards and outwards than they did before. Hence also the change in the foramen ovale, which becomes elongated and narrow; and in the sciatic notch, which is somewhat diminished in its size; and in the angle of the symphysis pubis, which becomes much less acute.

The effect of these changes is, as Camper showed, favorable to the size of the pelvic cavity. The partial obliteration of the brim makes the transverse and oblique diameters greater than usual; and the turning outwards of the tuberosity and ramus of the ischium increases the width of the inferior aperture; so that on the whole, though the antero-posterior diameter is somewhat lessened, the general dimensions of the pelvic cavity are enlarged by the whole series of these changes. This however is not generally the case in congenital luxations; in these, though the changes that take place are on the whole similar to those that follow accidental dislocations, yet the approximation of the sacrum and symphysis pubis, by the increased projection of the former, and the elevation of the latter by the powerful action of the recti abdominis muscles constantly pulling upon the unnaturally inclined pelvis, often tend so much to diminish the antero-posterior diameter as to render an accouchement difficult or impossible.

The rest of the work is occupied with two remarkable cases of this congenital luxation, some observations on the explanations that have been offered of the process, and a case in which the author believes that the dislocation of the femur resulted from an unnatural development of the mass of fat (the synovial gland) at the bottom of the acetabulum. To these however our space does not allow us to do more than refer as good examples of the diligence and accuracy with which the labours of anatomy are still carried on in Holland. It is to be lamented that their results are so little known and appreciated in this country; and we shall be glad if by these and some future notices we can assist in obtaining for the worthy successors of the best anatomists in Europe the European reputation which they merit.

Art. X.

Statistical Researches relative to the Etiology of Pulmonary and Rheumatic Diseases, illustrating the application of the Laws of Climate to the Science of Medicine; based on the Records of the Medical Department and Adjutant-General's Office. By Samuel Forry, M.D., Medical Staff, United States Army, &c. (Reprinted from the American Journal of the Medical Sciences.)—*Philadelphia*, 1840. 8vo, pp. 44.

The attention of the writer of this essay was first directed to the subject of it whilst arranging the Army Meteorological Register, and the Medical Statistics of the American Army, which we are glad to find are now in course of publication. In addition to the object announced in the title-page, the author wishes "to demonstrate the advantages of peninsular Florida as a winter residence for pulmonic invalids."

Few climates promise greater facilities for solving such questions as are here proposed, than that of the United States. "The extreme north," we are told, "has a climate in which cold predominates, vexed by winds that have passed over interminable snows; the south acknowledges the genial influence of the sun; whilst the middle vibrates alternately to both extremes. The climate of the United States is, in truth, remarkably inconstant and variable, "passing rapidly" says Malte-Brun, "from the frosts of Norway to the scorching heats of Africa, and from the humidity of Holland to the drought of Castille." So sudden are the vicissitudes of weather in the middle States, that, in the language of the Spectator, we often "lie down in July and rise in December." In a note we are told that "the climate of the new world, viewed in its general feature, is, contrary to common opinion, more mild and uniform than that of the old. Taking, for example, the annual temperature of 53°·60, the eastern coast of Asia, shows a difference of 55°·80 in the mean temperature of summer and winter, whilst the eastern coast of America exhibits a difference only of 43°·60; and, on the other hand, the western coasts of Europe and of America present respectively a difference of 28°·30 and 23°. It appears too that the western coast of North America has a lower mean temperature than the western coast of Europe under the same latitude. Thus Bordeaux, which is on the same parallel with Fort Sullivan, has an annual temperature of 15° higher. The lower temperature of the North American continent is attributable doubtless to the circumstance of the warmer parts of America being continuous with the frozen regions of the north, whilst Europe is separated from those regions by intervening seas.

The facts, therefore, contained in this essay refer to an extensive country presenting two strongly contrasted regions, a north and a south, and an intermediate one made up of the other two, and presenting alternately the characters of both. The *climate* of this and of other countries is made up of many elements which it would be very difficult to submit to separate measurement. Accordingly only two are selected for examination, *the temperature of the air and its hygrometric state*—"agents always supposed to exert a potent influence in the causation of pulmonary and rheumatic diseases." For the purpose of this enquiry the posts occupied by troops are divided into three groups—a northern, middle, and southern; the northern comprising posts on the coast of

New England, extending as far south as the harbour of New York; posts on the northern chain of lakes, and posts remote from the ocean and inland seas; the middle, the atlantic coast, from Delaware Bay to Savannah, and interior stations; and the southern, the posts on the Lower Mississippi, and in the peninsula of East Florida. These grand divisions not only present the differences already mentioned among themselves, but the subdivisions present peculiarities of climate which must not be neglected. Thus we are told that "the northern division presents the greatest variety of climate; on the sea-coast of New England the influence of the ocean modifies the range of the thermometer and the mean temperature of the seasons. Advancing into the interior the extreme range of temperature increases, and the seasons are violently contrasted. Having come within the influence of the great lakes, a climate like that of the sea-board is found, and proceeding into the region beyond the modifying agency of those inland seas, an excessive climate is again exhibited." A table is subjoined in which the temperature of the sea-coast is contrasted with that of the posts remote from the ocean and inland seas. From this table it appears that the mean temperature of the winter on the sea-coast is 6°·05 higher than in parts remote from the ocean and inland seas; the temperature of the spring, however, is lower by 4°·13, that of the summer by 8°·71, and that of the autumn by 0°·40. A more striking contrast is afforded by comparing the difference between the mean temperature of summer and winter in the two districts respectively. On the sea-coast the difference is 38°·61, and remote from the coast 53°·37. This fact shows that the mean annual temperature is not all that must be taken into account in comparing one locality with another, the extraordinary inequality presented in each by the seasons being at least as important an element of climate. A similar comparison to the above is also presented for posts on the lakes, and posts remote from the lakes, but in the same region, from which it appears that whilst the mean temperature of the winter near the lakes, (which lakes are 1°·46 north of the posts remote from them,) is 2°·54 higher; that of the summer is 10°·40, that of the spring 6°·65, and that of the autumn 2°·04 lower. The difference between the mean temperature of summer and winter on the lakes is 43°; that of the districts remote from them 55°·84. Another striking difference between the two localities is in the number of fair, cloudy, rainy, and snowy days. On the lakes the number of fine days is little more than half those in the remoter districts, the number of cloudy days nearly double, the number of rainy days is as 7 to 5 nearly, and that of days on which snow falls, 5 to 3 nearly. From this comparison it appears that on the shores of the ocean, or inland seas, the temperature is more equable, the air more moist, the changes of season more slow, uncertain, and variable; and that on the other hand, the climate of places remote from the seas and lakes is characterized by a great range of temperature, a strong contrast between winter and summer, and constant and rapid changes of season. The districts of the sea-shores and of the lakes resemble each other sufficiently to admit of being classed together, that of the district remote from both presents remarkable characters. "From November to May, cold weather prevails, the ground being generally covered with snow to the depth of three or four feet, and the general range of the thermometer being from

the freezing point to 30° below zero. The summers are equally remarkable for extremes of temperature. The heat is often as oppressive as in Florida, the mercury sometimes rising in June, July, and August, to 100° Fahrenheit in the shade. Unlike the two preceding classes, in which the air is moist, and the changes of the seasons more slow and uncertain in this one, a constant and rapid succession is observed among the seasons, summer succeeds winter so rapidly that there is scarcely any spring, and vernal vegetation is developed with remarkable suddenness."

In the *Middle Division* we are told that the two systems of climate bear the same meteorological relation towards each other, as the third class of the *Northern Division* does to the first two. "The *Southern Division* is characterized by the predominence of high temperature. Proceeding south from Canada to Florida, the seasons become more uniform in proportion as their annual temperature increases. This is strikingly illustrated on comparing the difference between the mean temperature of summer and winter at Fort Snelling, Iowa, and at Key West, at the southern point of Florida, the former being 55°·51, and the latter only 11°·34." Our space will not allow us to enter into more minute accounts of the climate of the several localities contrasted;—the most important features have been already stated. We now come to the tables which present the influence of those strongly contrasted localities on the health of the troops. The aggregate mean strength employed amounts to 47,220, and the period of observation extends from 1829 to 1838 inclusive. In the formation of the tables 1500 quarterly reports of sick have been used, and the mean strength of each post has been computed from monthly returns in the adjutant-general's office.

The army of the United States is comparatively small, the whole force not exceeding 5000 men; and as these are scattered over an immense extent of territory, and subject to every variety of climate and temperature, the mortality may be expected to differ very considerably in different parts of the Union. Accordingly we find that, while in the northern division it does not exceed 15 per 1000, or about the same proportion as among British troops in North America, the average in the southern and middle division of the States is as high as 42 per 1000 annually. Indeed, at some of the southern stations, particularly those on the Lower Mississippi, the loss of the troops has been as great as in several of the West India Islands during the same period, 53 per 1000 having perished annually. Even in East Florida, of which as a residence for invalids Dr. Forry draws so flattering a picture, the mortality on the average of ten years was 39 per 1000; and in 1836 and 1837 it amounted to double that rate.

Of the diseases by which the mortality in the United States Army has been occasioned, no specific information is given, except as regards pulmonic and rheumatic affections; and it must be premised that the deductions, even as to these, are liable to considerable exception, owing to the causes of death having in many instances been omitted. Defects of this kind, however, are not likely to be so common in reporting the cases which came under treatment, because the stoppage to which the soldier is subject when in hospital, and which we presume exists in the American as well as the British army, must operate as a check upon any omission.

The following Table exhibits a summary of the Returns on which Dr. Forry has founded his conclusions in regard to the influence of climate in producing pulmonic affections in different parts of the States:

	Aggregate mean strength on average of 10 years.	Total admissions into Hospital in 10 years.				Ratio of admissions per thousand of mean strength annually.				Total deaths in 10 years from			
NORTHERN REGION.		Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis.	Catarrh and Influenza.	Pneumonia.	Pleuritis.	Phthisis Pulmonalis, and Hemophysis.
Atlantic Posts.....	3663	760	68*	82*	38	208	22	26	10 4/10	...	1	...	15
Posts on the Lakes ...	5976	1801	111	181	50	300	19	30	8 4/10	1	4	...	0
Posts remote from the Ocean and Lakes	12604	6977	211	355	65	553	17	28	5 1/10	...	3	1	23
Total.....	22242	9538	390	618	153	429	18	28	7	1	8	1	47
SOUTHERN REGION.													
Coast from Delaware Bay to Savannah	5850	2842	80†	102†	65	486	25	32	11 1/10	4	1	1	36
South Western Stations	11140	3233	430	592	123	290	39	52	11	...	31	2	63
Posts on the Lower Mississippi	3381	739	73	96	30	218	22	28	9	...	2	2	10
East Florida	4607	658	68	113	40	143	15	24	8 7/10	...	...	1	9
Total	24978	7472	651	903	258	299	26	36	10 3/10	4	34	6	118

We have given these results precisely as they are stated in an abstract appended to the pamphlet under review, merely omitting the cases of pneumonia and pleuritis at Fort Independence and Fort Monro on account of the probable sources of error pointed out by Dr. Forry; and we shall now proceed to consider how far they correspond with the conclusions drawn on the same subject from the Statistical Reports of the British Army by Major Tulloch, as the value of all these statistical documents depends on the facilities they offer for the purpose of comparison.

One of the most important and perhaps the most startling of the deductions drawn from the Statistical Reports of the British army, was the greater frequency of phthisis pulmonalis in the tropical regions of the west, than in our own cold, variable, and much-abused climate, or even in the still more inclement regions of Canada. Now, on referring to the influence of climate on this disease in the United States army, as shown in the preceding abstract, results precisely similar are obtained. Thus, throughout the whole of the southern divisions possessing a climate somewhat similar to Bermuda, and the most northerly of the West India

* These numbers are exclusive of the cases at Fort Independence.
† These numbers are exclusive of the cases at Fort Monro.

Islands, the proportion attacked annually by that disease averages $10\frac{8}{10}$ per 1000 of the mean strength, while throughout the northern region the average is only 7 per 1000 annually, and in that part of the northern region where the climate is the most inclement of all, the proportion attacked is but $5\frac{1}{10}$ per 1000. Compare this with the proportion attacked at each of the following stations, as shown by the Statistical Reports of the British army, viz.:

In Jamaica	13
West Indies . . .	12
Bermuda	9
Canada	$6\frac{1}{2}$
United Kingdom . .	$6\frac{1}{2}$

The returns of both armies will be found to establish most clearly and distinctly the same principles, viz., that phthisis is nearly twice as prevalent in the southern as in the northern regions of the western hemisphere, though the nature of the climate and our preconceived notions of the agencies by which that disease is influenced would *à priori* have led us to anticipate the reverse conclusion.

With his own tables before him to prove the contrary, we are surprised to find Dr. Forry stating (p. 22,) that phthisis, pneunomia, and pleuritis are less common in the peninsula of Florida than in any other part of the United States. That this is not the case as regards the first of these diseases at least, will at once be manifest on reference to the abstract on the preceding page, where the proportion attacked is shown to have been

	$8\frac{7}{10}$	per 1000 annually.
While on the posts on the northern lakes *it was only*	$8\frac{4}{10}$	,, ,,
Posts remote from the ocean and lakes, *only*	$5\frac{1}{10}$	,, ,,

So that the climate of Florida, to which Dr. Forry is so anxious to send consumptive patients, absolutely by his own figures is proved to originate more than an average number of cases; to say nothing of an annual mortality of 61 per 1000 from other diseases, and the chance of death from causes not within the province of the doctor, such as being scalped by the Seminole Indians, an event we believe by no means uncommon in that quarter.

Dr. Forry appears equally unfortunate in his deductions in favour of Florida as a residence for consumptive patients, if the mortality by that disease as deduced from the preceding abstract is taken as the criterion: for throughout the northern regions

This amounted annually to . .	2·1	per 1000 of the strength.
In Florida, to	2·0	,, ,,
Throughout all the southern and middle stations, to . . .	4·8	,, ,,

So that the utmost which can be said of Florida is, that the mortality from phthisis is less than in the other southern or middle stations; but unquestionably it is much the same as in the north, which we presume, from Dr. Forry's train of reasoning, is the quarter whence he is most anxious to draw his consumptive patients to enjoy the balmy influence

of a southern climate. Though we have arrived at these conclusions from the doctor's own figures we apprehend that, as in the British army, so large a proportion of the consumptive patients are discharged from the service before the disease has time to arrive at a fatal termination, that it is impossible to establish with certainty the exact proportion of deaths which it occasions at the different stations; but this source of error would of course be just as likely to affect the northern as the southern divisions.

The following Table made up from Dr. Forry's returns affords, however, still better means of testing the advantage or disadvantage likely to be derived by a removal even in winter, from a northern to a southern climate:

Northern Region.	Mean strength. 1st quarter.	Mean strength. 4th quarter.	Average of winter season.	Attacked by Phthisis. 1st quarter.	Attacked by Phthisis. 4th quarter.	Attacked by Phthisis. Total in winter season.	
Atlantic Posts	4018	3377	3697	7	10	17	or 4·6 per 1000.
Posts on the Lakes	6370	6205	6287	17	10	27	or 4·3 ,,
Posts remote from Ocean and Lakes	12837	13219	13028	28	14	42	or 3·2 ,,
Total in Northern Regions			23012	52	34	86	or 3·7 ,,
Florida	5134	4421	4777	11	9	20	or 4·2 ,,

From this comparison it is obvious that fewer cases originate throughout the northern States during the extreme severity of their winter than in the mild and equable winter of Florida, where the thermometer rarely falls below 50°. To remove a patient, even on the approach of winter, from the former to the latter would therefore, according to all the ordinary rules of arithmetic, increase the prospect of confirming or aggravating the disease in the proportion of 42 to 37, and even if, instead of the average, we had taken the worst of the northern stations as our standard, the chance of amelioration would have been only in the proportion of 46 to 42, too slight a difference certainly to warrant the high expectations entertained by Dr. Forry.

This conclusion does not rest merely on one series of facts: for the information supplied by the pamphlet under review shows that, out of the whole 412 cases in the 10 years under observation, the proportion which originated in summer and winter was as follows:

		The number attacked was	Out of an aggregate strength of	
In the winter season.	1st Quarter	122	48976	
	4th Quarter	85	46608	
		207	47792	or $4\frac{4}{16}$ per thousand.
In the summer season.	2d Quarter	106	46310	
	3d Quarter	99	46981	
		205	46645	or $4\frac{3}{10}$ per thousand.

Being, to within a fraction, precisely the same proportion in summer as in winter. Dr. Forry arrives at the same results by a different series of calculations, in which he shows the total ratios attacked by phthisis at all the stations to have been in each quarter as under:

1st Quarter.	2d Quarter.	3d Quarter.	4th Quarter.
19	19	15	15

The sum of the first and fourth quarters constituting the summer months is 34, and that of the second and fourth precisely the same; yet he states that no general laws "can be deduced from these numerical results," though there is this general and most important law standing out in broad relief before him that, as precisely the same proportion of attacks are found to originate in summer as in winter, and in the mildest regions of the south, as in the coldest and most inhospitable of the north, it is, to say the least, most improbable, that benefit can accrue in cases of genuine phthisis, by a removal from the latter to the former at any stage of the disease. Change of scene, change of air, and the excitement produced by travelling in a country which presents much novelty of character to interest the patient may always be expected to exert a cheering, and in some even a sanatory influence, but so far as can be determined by the arithmetical evidence before us, precisely the same result must ensue even if the transition was from a warm climate to a cold one. In this remark, however, we do not include cases of chronic bronchitis which, being more nearly allied to simple catarrhal affections may, like that class of diseases, be more susceptible of benefit from a mild and equable climate.

The circumstance stated by Dr. Forry, that "nearly all the cases of consumption in the northern division, are ascribed to the use of ardent spirits," would seem still further to diminish the benefit he anticipates from a southern residence, for how much greater must be the tendency to consumption there, when the cases are so much more numerous without that exciting cause to induce them. Though this view would materially favour our previous conclusions, we are not disposed to coincide with Dr. Forry in the belief that the relative prevalence of phthisis is materially affected by intemperance, knowing that the use of plantation rum is just as common in the southern, as "gin-sling" or "cocktail" in the northern divisions of the States; still less are we inclined to coincide with him in the supposition, that the prevalence of that disease in some southern latitudes is attributable to the increased susceptibility to chronic affections, and the debilitating heat in such climates. On the contrary we know from undoubted authority that in the British army in the East Indies, a body of men perhaps more addicted to the use of spirituous liquors than any in Her Majesty's service, and all suffering less or more from chronic disease, and the debilitating effect of the highest temperature to which the human frame is exposed, not two cases of genuine phthisis are found to occur among a thousand soldiers annually; and of those that do occur, a considerable proportion originated before the arrival of the individuals in that country.

One fact of this kind is worth volumes of argument, and affords in itself a sufficient reply to many of the objections stated by Dr. Forry, in ignorance of so remarkable a feature in the history of this disease. Before assuming the part of a critic, it is highly necessary in questions of this

kind, to be fully informed of the influence of the disease not only in the western hemisphere, but also in the east; and we feel convinced if Dr. Forry will suspend his conclusions till he has all the facts fully before him, he will be satisfied on many points regarding which he at present appears sceptical.

Some will no doubt be disposed to put the question, why should such different results be obtained in the western compared with the eastern hemisphere, when the climate, so far as regards temperature at least, may be said very nearly to correspond? To such enquirers it may at present be a sufficient reply, that our business is, rather to state facts than to account for them; but surely there is nothing improbable in the conclusion that phthisis may, like many other diseases, have its favorite localities, and that the inhabitants of one quarter of the globe may be subject to its influence while those of another are comparatively exempt. Is there not before us the striking example of yellow fever, annually ravaging the southern shores of the United States and our West India islands, while in the same latitudes on the other side of the line, and under precisely similar circumstances of locality and temperature, not a case of the disease is found to occur,* and in the tropical regions of the east it is altogether unknown. Cannot the same power which has set limits to the pestilence, say also to consumption, thus far shalt thou come but no further? Or, because short-sighted mortals cannot as yet trace distinctly to physical agencies the wonders of his workings, are we to doubt the result of nearly a million of observations, extended for many years over thousands and ten thousands of our countrymen, and recorded by men whose professional character and zeal for science afford the best possible guarantee that they have been recorded with truth?

In regard to pneumonia and pleuritis, the facts exhibited in the returns of the American army quoted by Dr. Forry confirm, in the strongest manner, what had previously been ascertained in regard to the influence of these diseases in the Statistical Reports of the British Army. It was there shown that neither as regards prevalence nor severity did they seem to be at all influenced by temperature, moisture, or any of the known atmospherical agencies; that, in fact, the causes of their origin and operation were just as inexplicable as those of consumption. In Bombay, in Malta, in Nova Scotia and New Brunswick, climates so remarkably different, the proportion attacked on an average of 20 years was exactly 34 per thousand; and unfortunately for Dr. Forry's hypothesis, that "in proportion as the high temperature of summer makes an impression on the system, do the lungs become susceptible to the morbific agencies of the opposite seasons," it is found by the British Medical Returns, that the proportion attacked annually in Jamaica and Ceylon, where the difference between the temperature of summer and winter is only a few degrees, amounts to 14 and 18 per thousand respectively; while in the United Kingdom, where that difference is at least threefold as great, the proportion attacked is exactly a mean between the other two, or 16 per thousand. However pleasing it would be to discover the laws which regulate the operation of the causes of these diseases, we feel bound to call for stronger evidence than has yet been adduced by Dr. Forry before acceding to his conclusions.

* See Report on the Health of the Navy.

The following table given by Dr. Forry, to show the relative prevalence of these diseases at different seasons of the year, and in different parts of the Union, affords the strongest possible corroboration of the results and deductions on this head previously obtained from the Medical Returns of the British Army.

	Ratio* treated per thousand of mean strength annually for pneumonia and pleuritis.					
	1st quarter.	2d quarter.	3d quarter.	4th quarter.	Annual results.	
NORTHERN DIVISIONS.						
Posts on the Coast of New England	12	11	8	10	41	
Posts on Northern Chain of Lakes	11	15	13	11	49	average 45.
Posts north of lat. 39°, and remote from the ocean and inland seas	14	11	7	12	45	
Total Northern Division...	37	37	28	33		
MIDDLE DIVISIONS.						
Coast from Delaware Bay to Savannah	21	11	8	16	57	
South-western Stations	46	18	10	20	92	
SOUTHERN DIVISIONS.						
Posts on the Lower Mississippi	20	9	4	11	47	average 44.
Posts on the Peninsula of Florida.....	14	9	8	6	39	
Total	138	84	58	86		

Here it will be observed, that on the average of the three most northerly stations subject to great extremes of temperature, the proportion attacked is exactly 45; while on the average of the two southern ones, where the climate is comparatively mild and equable, the proportion attacked is exactly 44, as near an approximation as can possibly be looked for when fractions are rejected in the calculation. Again, with all that remarkable difference which exists in the Northern Divisions between the extreme heats of summer, when the thermometer often for months rises nearly to 100° of Fahrenheit, and the extreme cold of winter when it occasionally falls below zero, still we find from the preceding table that the proportion attacked there in the winter compared with the summer quarters was

Winter Season { 1st Quarter . . 37 / 4th Quarter . . 33 } average 35.

Summer Season { 2d Quarter . . 37 / 3d Quarter . . 28 } average 32½.

And not only does the average of the summer and winter attacks correspond thus nearly, but on the northern chain of lakes, the proportion attacked in summer is even considerably greater than in winter, the sum of the two winter quarters being only 22, while that

* The sum of the ratios in this table does not correspond exactly with the numbers given on page 426, owing to fractional parts being rejected, but we have stated it precisely as in Dr. Forry's pamphlet, p. 18.

of the two summer ones is 28. Yet along the southern shores of Lake Erie, Ontario, and Michigan, the summer is by no means short, and the temperature is high. We leave it to Dr. Forry to reconcile this simple fact with the law which he lays down, that in proportion as the high temperature of summer makes an impression on the system, do the lungs become susceptible of the morbific agency of the opposite seasons.

However much we may differ with Dr. Forry in his conclusions as regards other pulmonic affections we perfectly concur in what he states regarding catarrhal affections. The Statistical Reports of the British as well as those of the American army, all tend to the conclusion that these affections are generally most common where the seasons are violently contrasted, and that they are less dependent on diurnal variations of temperature than on their extreme range. In the returns from all the northern stations of the British army, the cases are nearly twice as numerous in winter as in summer, and on this account there can be little doubt that considerable benefit is likely to be derived by patients labouring under *chronic bronchitis*, provided they can exchange the extreme severity of a northern winter for the more genial influence of that season in the south. As regards consumption, pneumonia, and pleuritis, however, there exists no numerical evidence to warrant any such conclusions; on the contrary, all the facts, whether deduced from the returns of the American or the British army, clearly demonstrate the reverse.

It is impossible to say why such a distinction should exist in regard to the influence of the same causes on diseases hitherto supposed so nearly allied in their origin; all we can do is to notice the fact. It must always be kept in view that our knowledge of the geographical distribution of diseases is yet in its infancy, and that what little has been established is far from warranting much reliance on our preconceived notions as to the influence of climatorial agencies. Who, for instance, would have supposed that rheumatism, the absence or modified character of which was supposed to depend so materially on the mildness and equability of a climate, would be found more prevalent in the West Indies and Mauritius than in Nova Scotia or Canada? Yet it has been clearly established by the Statistical Reports of the British Army, that while the proportion attacked at the two latter stations was only from 30 to 40 per 1000 of the force annually, at the two former it was from 46 to 49 per 1000; and now we find by the Statistical Reports of the American Army, that in the southern division of the States, including the peninsula of Florida, the proportion attacked annually is as high as 119 per 1000 of the strength. That rheumatic affections are but little under the influence of the seasons, violently contrasted as these seasons are in most parts of the United States, is further shown by the following summary of the proportions attacked in each quarter, extracted from Dr. Forry's pamphlet.

		Attacked per thousand of strength.	
Winter Season	1st Quarter . .	249	average 225.
	4th Quarter . .	232	
Summer Season	2d Quarter . .	219	average 210.
	3d Quarter . .	201	

The returns given by Dr. Forry show that rheumatic affections are exceedingly common throughout the American Army; the proportion of cases which come under treatment annually being from three to four times as high as in the British Army. He endeavours to account for this difference by the supposition that soldiers treated in quarters may have been omitted in the returns of the latter, which profess only to contain admissions into hospitals. In this respect, however, he is in error; as under that head is almost invariably included every case which comes under treatment, whether in hospital or in quarters, and the proportion of the latter is so small, that at the utmost it could not make more than a fractional difference in the results.

Having thus examined in detail the principal observations of Dr. Forry in regard to the etiology of pulmonary and rheumatic affections, we shall briefly notice some remarks by him, arising, we apprehend, principally from a want of acquaintance with the principles on which the British Statistical Reports are formed.

In the first place he objects to England having been assumed as the standard of comparison: now we conceive it would be difficult, even for the ingenuity of Dr. Forry, to devise any better standard for estimating the influence of various diseases among our troops in other countries, than by carefully observing, in the first place, to what extent they are liable to them in their own. A comparison of the extent to which the natives of each country are thus affected might, no doubt, have been exceedingly useful as a criterion in some diseases; but it would have been exceedingly deceptive as a standard in others. On the west coast of Africa, for instance, fevers cause only the same extent of mortality among the native troops as among troops in England, yet how enormous would be the conclusion were we from such data to assume that class of diseases to be comparatively rare there? It surely seems a much less exceptionable mode of investigation, to ascertain, in the first instance, the influence of each disease on a certain class of individuals in this country, and then to carry out the same series of observations on the same individuals, or others similarly circumstanced, throughout every quarter of the globe.

Besides, where are we to look for the means of comparing the diseases of the natives of different countries? Throughout all the stations embraced in the British Statistical Reports, no information of the kind has been attainable, except for Malta, and that, it must be admitted, the author has liberally availed himself of. Dr. Forry seems to think that a deduction should have been made of the deaths among children and old persons from marasmus, previous to drawing any conclusions as to the prevalence of consumption in that island, forgetting that even had it been practicable to make that separation, which it was not, it would have been necessary also, previous to drawing any conclusions, to separate from the strength the number of children and old persons who are liable to marasmus, and not to the more decided forms of consumption. This would have reduced the strength of the population about one half, and instead of diminishing the ratio of mortality by the latter disease would absolutely have increased it beyond what it was estimated at in the British Statistical Reports.

That diseases of the lungs create very nearly the same proportion

of mortality among the civil population of Malta as among that of Great Britain, can now be very satisfactorily proved by the following calculation. The population of Great Britain at Midsummer, 1838, must have been, according to the late census, about 15,196,225, of whom, it is shown by the registrar-general's returns for that year, that 88,517 died of diseases of the lungs, (excluding hydrothorax, which is not inserted under that head in the Maltese returns,) being in the ratio of $5\frac{8}{10}$ per thousand annually, while the returns from Malta show that on the average of the last twenty years the mortality by the same description of diseases was $5\frac{1}{10}$ per thousand annually, a very close approximation it must be admitted, the more especially as 1838 was a year in which the mortality from diseases of the lungs was much increased in this country, owing to the very general prevalence of influenza. We have no doubt that a still nearer approximation will be obtained by comparing the deaths by this class of diseases in the registrar-general's returns for the year 1839, (now in course of publication,) with the returns from Malta for the same period, and in that view we shall take some future opportunity of submitting them to our readers.

Dr. Forry conceives it an error in the Statistical Reports of the British army, that the returns of the dragoon-guards and dragoons should have been assumed as the standard for estimating the relative influence of pulmonary disease in different countries. Had he been aware of the peculiar constitution of our army, he would have spared himself the trouble of so ill-founded an objection. To accurate statistical enquiry, it is essential that the individuals over whom it extends should be for a considerable period under observation. Now the regiments of the line being constantly in a migratory state, and seldom more than three or four years at home, would clearly have been a most objectionable standard, more particularly as a large proportion of the deaths occur from diseases contracted abroad. The depôts would have been still worse, because a constant interchange of healthy for unhealthy men is taking place between them and the service companies abroad. It was absolutely necessary, therefore, to take as the standard some class of troops permanently resident in this country. The only ones of this description are the foot-guards and cavalry, the former of whom being restricted to the duties of London, would clearly have been objectionable, as exhibiting, not the standard of health throughout the kingdom generally, but merely in the metropolis. It therefore became necessary to adopt the dragoon-guards and dragoons as the standard, being the only description of force which was not objectionable in these respects; and when it is kept in view that even among them the mortality by diseases of the lungs includes one half of all the deaths, it can certainly not be deemed too favorable a criterion of the influence of these diseases on troops in this country.

It would have been well for Dr. Forry to have made himself aware of all such particulars before he assumed the part of a critic on the admirable statistics of the British army: had this been the case, he would have saved much of the valuable time which he has thrown away in searching for errors in the works of others, which, devoted to his own, would have rendered it of more value to medical and statistical science.

Art. XI.

Séméiotique des Urines, ou Traité des Altérations de l'Urine dans les Maladies; suivi d'un Traité de la Maladie de Bright aux divers âges de la vie. Par Alf. Becquerel, m.d. &c. &c.—*Paris*, 1841. 8vo, pp. 576.

The Semeiology of the Urine; or Treatise on the Alterations produced in the Urine by Disease; to which is added a Treatise on Bright's Disease at the different periods of life. By Alf. Becquerel, m.d. &c. &c.—*Paris*, 1841.

The manuscript of the present article has been lying on our table for upwards of seven months. The delay arose from our wishing to have an analysis of the first part of the work, especially devoted to the general symptomatology of the urine, incorporated with that of the author's treatise on Bright's disease. Circumstances unfortunately preventing us from being able to give, even now, the notice of that part, we are determined to defer no longer the promulgation of M. Becquerel's views upon a malady which must always be one of much interest to the profession in Great Britain, and which we have reason to believe is at present occupying the attention of not a few active young enquirers. The portion of the volume which we now review is perfectly complete in itself.

M. Becquerel having obtained by his own labour, or by the gift of his friends' portfolios, ninety-four cases of Bright's disease, "the greater part of them curious and interesting, and each complete in itself," found himself tempted strongly to trace the history of the disease in all its relations. The result of this temptation is the treatise before us. The author calls upon his readers to pronounce whether the results he has obtained bear the stamp of novelty, and this with a confidence of tone which, whether it give proof of good taste or not on the part of the appellant, at all events allows those watching over the progress of pathology no excuse for delay in occupying the judgment seat. He conciliates us, however, at the outset of his task by adopting the phrase *Bright's disease* for the malady on the following grounds: because he was unwilling to manufacture a term significative of the morbid change which he himself supposes characteristic of the disease; because that phrase honorably commemorates the discoverer of the malady; because it makes no assumption with regard to the nature of the disease It is natural we should consider these reasons judicious; for the same motives led us to adopt the same conduct in former articles on the subject.

An opening historical sketch of the rise and progress of knowledge on the subjects of dropsy dependent upon renal disease, of albuminous urine, and of Bright's disease itself is sensibly drawn up; and there is probably more soundness in M. Becquerel's rejection of certain vague and random phrases of Hippocrates, as demonstrating any acquaintance on the part of the father of physic with the conditions in question, than in the readiness of MM. Lallemand and Rayer to recognize in those phrases the evidence of such knowledge.

M. Becquerel commences his anatomo-pathological chapter with an enquiry into the external and textural characters of the kidneys differing from the healthy type, yet not necessarily indicative of actual disease in

those organs, being either accidental attendants upon such disease, or the result of functional or other changes in distant parts. An enquiry of the kind is manifestly a very important preliminary step in the investigation of the anatomical characters of disease in every structure. It is a point of importance to be able to affirm that undue coloration on the one hand, or an anemic tint on the other, are not the produce of local disease, but of the mode of death, of the constitution of the subject, of the condition of the atmosphere in respect of temperature and humidity, &c. Simple anemic discoloration of these organs has, we doubt not, been mistaken for one of the phases of Bright's disease, and for this reason it may not be without its utility to dwell somewhat upon its anatomical characteristics as described by the author.

The colour of the anemic organ is yellowish, with occasionally a shade of white. The pyramids of Malpighi (tubular cones) often share in this discoloration, but almost always present a deeper tinge, and the most external and widest part of the cones very commonly possesses a red hue, forming a sort of border of a deeper colour than the rest. It is a difficult point to explain the accumulation of blood in this particular situation; it probably depends upon some anatomical arrangement as yet undiscovered. If the state of anemia be complete, the cortical substance is completely discoloured; this is however rarely the case under ordinary circumstances; it is most common to find a few vascular arborizations in the external vascular rete, as also in the longitudinal striæ of the cortical substance. This state of the kidney may be distinguished from the discoloration of Bright's disease by the absence of enlargement, softening, and the peculiar chamois-leather tint observable in the latter case. The absence or presence of the essential characteristics of Bright's disease, characteristics to be presently discussed, also serve to distinguish the two conditions.

M. Becquerel, at a very early stage of his investigations, recognized the general accuracy of the descriptions given by M. Rayer, of the gross changes arising in the renal tissues during the course of Bright's disease, and accordingly devoted his attention to the discovery of the essential element of those changes. This he is persuaded exists in the glands of Malpighi. The changes arising in these minute bodies are referrible to three stages, which comprise, as follows, the six phases admitted by M. Rayer.* The first is a sanguineous congestion and distension of the glands, whence arise the redness and enlargement characteristic of that stage; the fact of this glandular congestion (recognized by M. Rayer himself) may be easily ascertained with the help of a common lens, but that the enlargement is dependent upon the change in these glands appears more distinctly, as shown by M. Becquerel, upon examining a kidney which has been submitted to ebullition or plunged into alcohol or dilute nitric acid. By these processes the glands are *coagulated*, and the important part they play in the disease, as it is alleged, distinctly shown. We have not, we confess, made these experiments, but admitting that the result announced will invariably follow, we cannot see that the fact proves these glandular bodies to be the *exclusive* seat of *injection*, as M. Becquerel would teach us to believe.

The author's second stage corresponds to the second and third of M.

* See the table given of these phases at p. 306 of our Tenth volume.

Rayer. Here the glands of Malpighi are said to be enlarged from infiltration with a yellowish material, which might with some reason be considered the albumino-fibrinous part of the blood, minus the colouring matter. The cortical substance now appears swollen, yellow, shining, and sometimes presents even a gelatiniform aspect. If a portion of it be boiled, the glands infiltrated with the albumino-fibrinous matter coagulate, and as the mode of this coagulation differs from that of the adjacent cellular membrane, they may then be disengaged with facility from their surrounding connexions. At least this is the ordinary result, but it may happen that the glands contract during the progress of ebullition, and hence, instead of appearing enlarged, actually present less than their average dimensions. The albuminous matter contains not an atom of pus; rubbed down carefully in distilled water and examined under the microscope, not a single pus-globule is to be found; and treated with sulphuric æther, it gives no evidence of the presence of fat. When thus diseased the glands are as nearly as possible impermeable by the finest species of injection.

In the stage of granulation described by Dr. Bright, M. Becquerel finds the glands of Malpighi still further diseased. Their yellowish colour is now exchanged for white, and to this alteration he ascribes their being easily visible, even on careless examination; they are also now still further enlarged.

The fifth stage of M. Rayer is, according to the observation of M. Becquerel, generally an attendant upon such cases as have run a very rapid course. He believes that in this form of the disease all the glands are not implicated, and that those which are diseased, present an unusually marked appearance from the non-implication of the surrounding tissue. He entertains not a shadow of doubt that the appearance of semolina granules ("grains de semoule,") under the capsule depends upon albuminous infiltration of enlarged glands. Occasionally there is an appearance of prolongation of the albuminous matter into the uriniferous ducts.

The main characteristics of the sixth degree of M. Rayer are the hardness of the kidney, and the comparative paucity of granulations. The hardness M. Becquerel explains by the increasing consistence of the albuminous exudation. The absence of granulations in numerous spots is ascribable to the following cause: in proportion as the glands present a more advanced amount of disease, the inter-glandular tissue undergoes increasing pressure and ultimately disappears; the granulations then come in contact with, and may become adherent to, each other. Now as their colour is the same in every direction, granulations cease to be perceptible except in some situations where the morbid change in the glands has not reached its maximum; the surface is the situation in which they are commonly wanting, a fact lending support to the theory just tendered, for there the disease commences and most rapidly attains to full development. Two cases are given exemplifying these notions. A woman died at la Charitè with dropsy and albuminous urine; the disease was of long standing. The kidneys were hard, resisting, and tuberous, the cortical substance exhibiting a uniformly scirrhoid aspect, shining, somewhat gelatinous and without any trace of granulations. By ebullition and the action of nitric acid, each separate minute gland was coagulated, and the entire substance shown to consist of an accumulation of these.

Fibrinous infiltration of the glands of Malpighi constitutes then, according to this author, the *fundamental* phenomenon of Bright's disease; but he does not maintain these bodies to be the exclusive seat of anatomical change. To their enlargement is due the general increase in the dimensions of the cortical substance and of the prolongations which it sends between the tubular cones; and if still further enlargement of the glands follow, separation, disaggregation, and even partial disappearance of those cones is the result. Another important effect of the altered size of the glands is atrophy of the cellular tissue and obliteration of the blood-vessels from pressure, this obliteration is rendered manifest by the colour of the part, by the microscope and by the results of injection. From some experiments made by M. Becquerel on the latter point, it appears that the glands are very imperfectly penetrated even by the finest substance, and even the venous and urinary vessels were in part blocked up.

The rudiments of this plausible and, we confess, to us attractive theory of the disease, are to be found in the writings of M. Becquerel's predecessors. Thus Gluge wrote in 1838: "The essence of the renal degeneration discovered in certain cases of dropsy consists in a disturbance of the circulation in the capillary vessels of the cortical substance, and primarily in the corpora Malpighiana. This disturbance, in turn, consists in interruption of the circulation, the blood-globules lose a part of their substance, become agglomerated, and no further motion of the blood is observed in vessels thus affected." To our author, nevertheless, belongs—should ulterior observation prove the soundness of his views—the great merit of distinctly stating the nature and progress of the anatomical changes, tracing their catenation and establishing the relations of the elementary alterations of texture to the grosser physical conditions which have hitherto mainly engaged the attention of observers. The results whereat M. Becquerel has arrived in respect of Bright's disease, correspond remarkably with those which he some time back obtained from his investigations into the nature of cirrhosis of the liver.* This disease he found constituted by enlargement or hypertrophy of the secreting lobules of the organ, through infiltration with albumino-fibrinous plastic matter, which is at first of soft consistence, [first stage of the affection:] this plastic exudation losing a portion of its contained water, contracts upon the tissue it infiltrates, and thus determines atrophy and shrivelling of the liver, [second stage.] The analogy between cirrhosis and Bright's disease, according to the author's notions of these organic maladies, is sufficiently apparent: his theory of the former is fundamentally the same as that taught by Dr. Carswell,† though in the details he differs from that eminent pathologist. The discrepancy probably in some measure depends upon the still unsettled state of opinion among the most distinguished anatomists, as to the ultimate structure of the liver.

M. Becquerel enquires why the condition of the kidneys should be, as it is known to be, extremely different in cases wherein the symptoms have been nearly alike, and appears to find a solution of the difficulty to his satisfaction in the acute or chronic state of the malady, and the variable amount of vital power of resistance possessed by different indi-

* Vide Br. and For. Med. Rev. vol. X. p. 560. Oct. 1840.

† Illustrations of the Elementary Forms of Disease, fascic. *Atrophy.*

viduals. He denies that the disease is, as maintained by M. Rayer, an inflammation, because the anatomical characters of that state, redness and swelling, friability, softening, and formation of pus, have never been observed as its attendants. The existence of congestion by no means involves that of inflammation; in the instance of Bright's disease hyperemia rarely originates in acute change, but commonly proceeds from the habitual stagnation of blood in the abdominal viscera consequent on disease of the heart, pulmonary emphysema, &c.

Such anatomical changes as arise in the kidney, independently of those of the corpora Malpighiana, are esteemed by M. Becquerel mere complications of the essential malady. Thus he regards in this light the induration of the cellulo-vascular tissue which separates the bodies just referred to; an induration evidently contributing to produce those irregularities of shape so commonly observed in kidneys affected with Bright's disease. Here appears also adhesion of the external capsule to the substance of the organ, with the milky-white patches frequently coexisting therewith. The ecchymotic red spots sometimes observed on the yellow ground, are by M. Becquerel presumed to depend not upon morbid vascularity, but simply upon the continued permeability of some few vessels. From 84 dissections recorded by Christison, Rayer, Martin-Solon, Forget, Tissot, &c. and 45 made by himself, he has ascertained the following to be the relative frequency with which the different stages of the malady are found at the period of death.

First degree,	(first of M. Rayer,) - -	10
Second degree,	(second and third of do.) -	41
Third degree,	(fourth, fifth, and sixth of do.)	78
		129

M. Becquerel's account of the secondary lesions of the affection acquires value from its numerical statements of the relative frequency of these. For example: Effusion into the peritoneum was detected in 96 subjects; into the pleura in 65; into the pericardium in 36 of the group of 129 just referred to. For further information of the same kind we refer to the original; the chapter is otherwise unmarked by novelty.

In the examination of the organic lesions, which may be considered to be developed previous to or at the same time as the renal malady, cardiac affections hold a prominent place. This is a just tribute to their frequency; M. Becquerel's figures show, that in about a third of the cases of Bright's disease some form of lesion, more or less characteristic, exists in the heart or valves. Now it is remarkable, as the author observes, that notwithstanding the equally great frequency of tuberculous formation in the victims of the renal affection, cardiac and tuberculous disease so rarely coexist in these subjects, that they almost seem mutually exclusive. We are unable to assist the author or our readers to an explanation of the fact—for such we may pronounce it to be on the faith of the analysis of his cases given by M. Becquerel.

In 51 of the 129 subjects already referred to, tuberculous disease of the lungs was detected; but in 29 only of these did the state of the pulmonary disease appear sufficiently advanced to justify the notion of its having exercised any material influence on the production of the renal disorganization.

M. Becquerel discovered in 15 of the 45 subjects dissected by himself, cirrhosis of the liver—still in its first stage in 9, advanced to its second in 6 of these. In 9 cases the hepatic and renal maladies were complicated with an organic lesion, probably of earlier date, of the lungs or heart. In 3 cases the cirrhosis was very far advanced, had evidently preceded in order of development, and probably acted as the cause of the disease in the kidneys. In the three remaining subjects both organs appeared in equally advanced stages of anatomical change.

In enumerating the changes undergone by the liquids in Bright's disease, the author states, that in addition to the blood found in the urine in certain stages of the disease, this fluid occasionally contains an insoluble organic matter of undetermined nature, exhibiting itself under the microscope in the form of amorphous and irregular fragments of a brownish colour; and further conjectures that this matter may consist of the colouring material of the blood in an altered condition. M. Becquerel agrees with his predecessors in recognizing the diminution of the normal chemical principles of the urine, (he terms urine thus characterized *anemic*, because it is observed in an anemic state of the economy,) as averred by them to exist in the disease; but he differs from them in maintaining that the decrease in amount of urea, does not proportionally exceed that of the other ingredients, and in regarding it as a simple condition of the existence of an *anemic* state of the urine, and not of the presence of Bright's disease. Another species of urine described in the earlier part of the volume, under the title *febrile*, is also observed in Bright's disease, when intercurrent phlegmasiæ arise—a fact of no mean importance, inasmuch as it shows that extensive disease of the kidneys does not prevent the fluid they secrete from undergoing the ordinary changes consequent upon variations in the state of the organism in general. Urine secreted by kidneys affected with the malady under consideration, sometimes become *alkaline;* this arises, as is alleged, from the decomposition of urea, and the development of carbonate of ammonia especially: an explanation already objected to by M. Martin-Solon. (Vid. Brit. and For. Med. Rev., vol. X. p. 311.)

We give in the opposite page, from our author, a very valuable table of the analyses of the urine in six cases of the disease, complicated or uncomplicated.

The altered conditions of the blood next occupy the author's attention. In order to estimate these correctly, the absence or presence of intercurrent inflammations must be taken into account. The results given by the author are derived from the experiments of MM. Andral and Gavarret; we state these in general terms, referring for the exact figures to the original. In the first category of cases, unattended by inflammation in other organs, the quantity of water is slightly increased, that of the globules and of the solid constituents of the serum, especially of the albumen, notably diminished; the proportion of fibrine remains normal. When inflammation in other regions complicates the primary affection, the urine continues as just described, except in regard of its fibrine—this principle obeys the general law of phlegmasiæ established by MM. Andral and Gavarret, that is, it augments in quantity.

Disease.	Observations.	Qualities of the Urine.	Density.	Quantity secreted.	Quantity of water.	Sum of principal solids.	Urea.	Lithic acid.	Inorganic Salts.	Organic matters.	Albumen.
Simple.	1*st. Anal.* A little fever, and march acute.	Colour greenish yellow, somewhat dirty, very acid, a little mucus.	1016·380	816·20	787·576	28·624	9·495	0·264	5·385	3·765	9·715
	2*d. Anal.* Disease become chronic; apyrexia.	Lighter yellowish colour; acid.	1010·080	1030·750	1011·610	19·140	6·520	0·616	4·277	5·097	2·630
Simple.	Male on the point of recovery; less albumen vastly than formerly; he got well eventually.	Acid; light colour with greenish shade, very little mucus.	1007·560	1830·400	1807·360	23·040	11·648	0·585	4·615	5·984	0·208
With polydipsia.	Male æt. 35, polydipsia œdema of lungs, ascites; improvement with tinct. of cantharid. horseradish and vapour baths.	Urine light coloured alkaline, whitish deposit, effervescence with acids.	1008·400	2291·200	2259·444	31·756	4·272	0·448	6·608	12·620	7·808
With pulm. tubercles.	Male, drinks much, lungs infiltrated, a little ascites.	A little acid, pale, clear, and abundant.	1005·460	3117·500	3083·405	34·095	11·910	0·795	5·268	7·952	8·170
In first stage.	No serous effusion of any kind.	Sanguinolent, a little lithic acid, very acid.	1012·600	741·25	722·320	18·930	5·784	0·347	3·800	4·454	4·545
			1010·080			25·931	8·322	0·509	5·159	6·645	

So much for M. Becquerel's results in respect of the normal principles of the blood; he next enquires whether this fluid undergoes modification by the addition of new elements. He is inclined to deny the existence of urea in the blood of patients suffering under this disease, but admits the point to be one needing further experimental investigation. The motives of his doubt appear in the results of seven most carefully conducted analyses—three of them made by M. Quevenne, two by M. Lecanu, and two by himself; in these instances not the least trace of urea was detected. On the other hand, M. Quevenne discovered some of this principle in the blood of a female affected with cardiac disease and dropsy; the kidneys were not diseased here, and the urine did not contain any sensible quantity of albumen. The reader will do well to compare the statements which we now lay before him with the abstract elsewhere given of the results of MM. Christison, Rayer, Guibourt, and others. (vol. X. p. 309.)

The lactescent condition of the serum noted by Christison and others did not exist in any of the cases observed by the author and MM. Andral and Gavarret; the blood, M. Becquerel alleges, scarcely presents a buff, unless as the attendant upon some inflammatory complication. From all this springs the following summary view of the pathology of the affection: "the cortical substance secretes in Bright's disease a urine, the properties of which are in harmony with the general condition of the individual; but by means of some incomprehensible mechanism, which is the consequence of the morbid state of that substance, it permits a certain quantity of albumen to pass, which of course comes from the blood. The blood becomes impoverished by this continual drainage of albumen; the quantity of globules and of the albumen of the serum diminishes, and hence arises a general condition, which savours of the 'anemic state,' or is itself a particular form of this. Under the influence of this state follow dropsies."

In the next chapter, the etiology of the disease is examined with more philosophy and on sounder principles than in previous works, and it is not a little gratifying to us to find that in contesting the alleged reality of certain of the influences described to be productive of the disease by MM. Rayer, Christison, &c., we were destined to be borne out by the figures of M. Becquerel. Thus, we exposed the utter fallacy of the argument adopted by Dr. Christison to prove the influence of intemperance upon the disease; and we find accordingly, that of sixty-nine subjects examined by M. Becquerel, nine only were given to indulgence in spirituous liquors—and in some of these cases certain internal lesions had preceded, and in all probability played an important part in the development of the malady. Again, in one third only of the 69 cases was the affection traceable to any form of exposure to cold and damp; even this proportion of cases, however, it may be urged, suffices to prove the power of those atmospheric conditions, and we do not deny this; but the smallness of the ratio shows that the extent of that power had been greatly exaggerated. M. Becquerel finds himself authorized in affirming, on the evidence of these cases, that the disease most commonly originates under the influence of preexisting organic lesions, of which the immediate effect is to induce an habitual state of congestion in the kidneys. Our limits will, unfortunately, not permit us to analyse this chapter with the attention it deserves.

We have elsewhere mentioned (vol. X. p. 323,) that Dr. Bright estimated the number of persons affected with the disease, as "at least one in six, if not in four," of those suffering sufficiently to keep their beds; a result obtained by boiling the urine of all the denizens of an hospital indiscriminately,—founded upon the notion that albuminous impregnation is pathognomonic of the disease,—and, finally, quoted with approbation by Dr. Christison. It is needless to point out, a second time, the error of thus attempting to establish the frequency of the disease, more especially as the days of albuminous enthusiasm may now be considered to be on the wane. The reader will receive with satisfaction the statement that M. Becquerel found 1 only in 85 of the patients received into the wards of the Hôpital de la Charité during the year 1839 affected with the disease; he will receive it with satisfaction, we mean, because it is an estimate plainly devoid of exaggeration, and made by an observer who, while he has no theory of his own affected by it directly or indirectly, had made himself master of the diagnosis of the disease. Out of 1448 patients admitted, 31 had pneumonia; 28 pleurisy; 66 continued fever; 38 diseases of the heart; and 17 the affection now under consideration. This calculation does not of course furnish proof that Bright's disease may not be more frequent in this country, but it does to our minds demonstrate that its real prevalence has been enormously overrated.

We pass over the chapters devoted to the symptomatology, the forms and complications of the disease, as comparatively unattractive, and find our attention arrested by the author's judicious statement of the circumstances, independent of the existence of Bright's disease, under which albuminuria may arise. The following extracts contain the most important points in this statement. "All cases in which the existence of albumen in the urine is due to admixture with pus, and the greater number of those in which it depends on the discharge of blood, must be first set aside. However a difficulty occurs here: during the first period of Bright's disease there is often blood in the urine, and it is difficult to determine whether the albumen depends simply on the escape of blood, as in other kinds of hematuria. The point is not always capable of being decided, and in some cases it will be impossible to come to a conclusion, if, as may be the case, this first period be not accompanied with dropsy. Under these circumstances we must wait before venturing upon a decided opinion; for the proportion of the other principles in the urine will throw no light on the matter, inasmuch as all the varieties under which that fluid presents itself, may be met with in the case supposed. No inconsiderable difficulty will be experienced in the following instance also: all dropsies arising as a sequence of scarlatina are not due to disease of the kidneys. Now in dropsy occurring independently of lesion of these organs, it is not very uncommon to observe coexisting hematuria, which determines the escape of albumen with the urine, and the diagnosis becomes so much the more difficult because this fluid has then almost invariably the *anemic* character; and, as I have shown, this is its most common character in Bright's disease also. Once the blood has disappeared, the urine will, it is true, be anemic and cease to contain albumen; but under such circumstances it will be necessary to wait further, in order to be entitled to give a positive opinion."

"Independently of these cases albumen exists in the urine under four principal conditions, and its presence then may render the diagnosis of the existing affection obscure.

"1. Albumen appears in the urine *in the course of* several acute febrile diseases," [the exact terms in which we announced the fact when disputing the correctness of M. Martin-Solon's opinions on the point,] "or of those in which functional disturbance to a certain amount exists. In cases of this kind the quantity of albumen is in general very trifling; it appears very irregularly, disappears to return or to cease completely. Under these circumstances the quantity of albumen is not in general sufficiently great to render the distinction of the case difficult.

"2. Albumen exists in the urine as an attendant upon certain diseases of the heart and some cases of pulmonary emphysema; its presence apparently depends upon mechanical hyperemia of the kidneys. In such cases the quantity of albumen is not greater, or of greater constancy and regularity in its appearance than in the former. If, however, the impregnation become considerable, we are almost warranted in affirming that Bright's disease complicated the cardiac lesion." [Cases on record prove that abundance of albuminous impregnation affords no such warranty.]

"3. Albuminuria exists in certain dropsies depending especially upon a morbid state of the blood, and which, when far advanced, lead to œdema of the kidneys. Such is the state of things sometimes in children, become the subjects of dropsy after scarlatina. Here no affection of the kidneys exists except œdema, and the diagnosis may be rendered obscure by the anemic character almost constantly presented by the urine. The distinction of the cases will be grounded on the fact that in that now referred to, the appearance of albumen does not occur until after dropsy has set in, that the quantity voided is generally much greater than in Bright's disease, and finally that it appears only temporarily, and often irregularly. The diagnosis would be almost impossible, and it would be necessary to procrastinate before pronouncing an opinion, if the quantity of albumen discharged became tolerably abundant, and the observer had had no opportunity of examining the urine from the outset of the disease.

"4. Albumen exists in the urine of some individuals who are perfectly healthy. Upon this it must be observed, that the first symptom of Bright's disease is albuminuria; the morbid changes of the blood and the consequences of these are consecutive phenomena. It may then be the fact, that the presence of albumen announces the development of Bright's disease, although there are no other symptoms of the affection present. The subject so affected appears in the enjoyment of health, but at a later period will appear the characteristic phenomena of Bright's disease. It is therefore necessary to be on the watch in cases where albumen is voided by individuals apparently possessed of sound health. However I observed for six months at the Hôpital de la Charité, a strong, robust, and vigorous infirmary-man, whose urine constantly contained a large proportion of albumen. The other properties of the fluid were normal. He was sent away at the end of six months, but I ascertained he filled the same office at La Pitié a year after. Whether he is destined to have Bright's disease at a future period I am unable to affirm." (p. 557.)

An argument, identically the same in essence as that contained in the last paragraph, was put forth by Dr. Christison, in evasion of the force of M. Solon's discovery regarding the presence of albumen in the urine during febrile diseases. The observations we made on Dr. Christison's attempt are of course applicable to the statement of M. Becquerel.

There is nothing in the author's pages on treatment calling for notice. He is strongly opposed to the use of diuretics, chiefly on theoretical grounds.

A section follows upon Bright's disease as it exists in infants. The

anatomical changes are fundamentally the same as at a more advanced period of life, but M. Becquerel has found the granular structure of the cortical substance when in the second and third phases, more distinctly developed in children than in adults. He also describes as follows two forms of change occasionally observed in infants, and which are not precisely similar to those described as affecting subjects who have reached puberty: "1. The size of the kidneys is slightly augmented, the capsule adheres only partially or not at all to the cortical substance. The surface of this substance is somewhat tuberous and irregular, but smooth and of a blueish-white colour; it presents some injected vessels and stellate ecchymoses. Attentive examination shows that this tissue is constituted by an agglomeration of a great number of granulations of blueish-white colour, and sometimes of tolerably large size, many of them equalling that of a pin's head. They are in general heaped up together, pressed against each other, and sometimes united so as to form small white granular patches. On section the cortical substance is seen to be enlarged, and presents in every part, as well as the prolongations into the tubular substance, the change just described; the tubular cones are often notched and partially destroyed. 2. The size of the organs is somewhat increased, the capsule easily removeable exhibits a chamois-leather colour without any injection. It presents an extremely abundant sprinkling of small granulations of similar, but lighter hue, and all of them about as large as a pin's head. They are often provided with a sort of prolongation or small tail."

Such are the principal novelties which this valuable treatise puts forth; we recommend the reader interested in renal pathology, however, not to content himself with the abstract we have just laid before him, but to procure the original work and carefully examine it for himself.

Art. XII.

On Rheumatism, in its various forms; and on the Affections of Internal Organs, more especially the Heart and Brain, to which it gives rise. By Roderick Macleod, m.d., Physician to St. George's Hospital.—*London*, 1842. 8vo, pp. 164.

Dr. Macleod's extensive experience and long connexion with a large hospital have afforded him a wide field for the study of rheumatism, one of the most common and most distressing diseases among the lower clases in this country. The contents of the present work, he informs us, have been derived, in part, from nearly 400 cases of rheumatism treated by him in his public capacity. From this ample store of materials he has composed a treatise which will be found very useful by those who have not had much personal experience of this disease, and are but little acquainted with its literary history. We cannot help expressing our surprise, however, that with such materials to write on, the author has given us so very little that is original, and has supplied us with so few positive data for enabling us to controvert, corroborate, or verify the statements of his predecessors. Even if regarded as a compendium of the present state of our knowledge the work is very defective. Indeed, it can only be looked upon as a sketch of the history of rheumatism, a sketch

too, of what is, in almost every particular, already familiar to all well-informed members of the profession.

It must not be understood from this, that we think lightly of Dr. Macleod's book. It certainly bears the stamp of a man of observation and experience, who is familiar with his subject; it contains many important observations and sound pathological views; and it inculcates, forcibly and clearly, methods of practice which are for the most part highly judicious. It is not, however, exactly the kind of performance we had expected from its author; and we think it is not nearly so good a work as he is capable of producing.

Such a work on rheumatism as would be a real boon to the profession, and a decided advance on the present state of our knowledge, will require, in spite of our English dislike of such a thing, to be of goodly dimensions and pregnant with details; and he who shall achieve the production of it must have a keen appetite for laborious observation, must be a wholesome and powerful digester of statistical facts, and have abundance of time withal to complete the elaboration of his materials. Without these appliances and means we expect from no man, however ample his opportunities or sound his judgment, a work of considerable importance on such a subject. The great range of the pharmaceutical expedients which have been, and continue to be adopted for the cure of rheumatism, will prevent any reasonable man from anticipating, with much confidence, the discovery of a new remedial agent, whose potency and versatile virtues shall entitle it to supersede, to any great extent, the remedies with which we are already familiar; and as it was with no such anticipation that we opened the volume before us, we hold it to be no imputation against it, that it renounces all claim to novelty in this particular also. But, to say truth, we feel assured, and would be glad if the conviction were more prevalent than it is, that what is wanted in medicine is far less the discovery of untried methods of treating diseases than of discriminative canons for the proper use of those which we possess. In respect to rheumatism this appears to be peculiarly desirable, since no important disease has ever been treated so variously, and few have had so many remedies which have appeared in the experience of some practitioners to beeminently useful, and in that of others not less eminently inert or injurious.

In his first chapter, the author expresses his concurrence in the established opinion, that the exciting cause of rheumatism consists chiefly in atmospheric vicissitudes: he agrees with Chomel in acknowledging also the frequent influence of hereditary predisposition. He states what has been known since the time of Boerhaave at least, that males are more subject to it in the acute forms than females, and that early and middle life furnishes the greatest number of cases.

For the purposes of describing the phenomena conveniently, and of pointing out the appropriate treatment, Dr. Macleod conceives it necessary to divide rheumatic affections into five classes, without however, contending that the names are free from objection; viz., *rheumatic fever;* the *arthritic* or *capsular;* the *chronic* or *muscular;* the *neuralgic;* and the *periosteal* forms of rheumatism.

Rheumatic fever. The second chapter contains a description of the phenomena of rheumatic fever, or acute rheumatism. The usual account

is given of the febrile state, and of the intensity, and fluctuations of the pain. The apparent limitation of the inflammation to the parts exterior to the synovial membrane, is specified as the circumstance which distinguishes the affection to which he confines the denomination *rheumatic fever*, from the *capsular* form of acute articular rheumatism. The aggravation of the pain during the night, which has been sometimes ascribed to increased warmth, is justly referred rather to "a nocturnal exacerbation which is experienced in this, in common with most other febrile diseases," and in support of this view the statement of Mr. Malcolmson is noticed concerning rheumatism in India, "that the natives suffer an aggravation of pain at night, although placed under circumstances which render any increase of temperature from without impossible, as their repose is taken in any corner where they can find space to lie down, and without going to bed at all." (p. 13.)

The joints which are the most frequently affected are, he believes, the following, in the order in which they stand; the foot and ankle, the knees, the hands, wrists, and shoulders; the elbow and hip joints more rarely. Dr. Macleod is also of opinion that rheumatism sometimes affects the *tunica albuginea testis:*

"Persons subject to rheumatism have complained of acute pain in one testicle, coming on suddenly, accompanied by increased heat, and by great tenderness to the touch, but without tumefaction; the symptoms shifting from one testis to the other, and at last disappearing as suddenly as they had come on, just in the manner we see rheumatism change from one joint to another." (p. 21.)

This is no new fact, a case of apparent rheumatism of the testes being noticed by Stoerck.

Of the anatomical results of the inflammation on the apparatus of the joints in this form of rheumatism, we have only the following meager statement:

"Opportunities very rarely present themselves of examining the joints during the actual existence of acute rheumatism, because patients very seldom die during such attacks; I have, however, in two instances, been able to examine the state of the parts primarily affected, but without finding any very striking results. The external redness had subsided in both cases, and the swelling had very much diminished, so that nothing appeared but a certain portion of serum, or serum and lymph, in the subcutaneous cellular membrane. The fibrous tissues were perhaps rather thicker than natural, but without redness; the synovial membranes were without any apparent participation in the disease." (p. 17.)

The treatment is detailed in the third chapter, and is introduced by the following observations:

"The more I see of rheumatism in its acute form, the more I am disposed to think that at its onset it is amenable to the same laws as other inflammations. When an attempt is made to enforce this argument, the most common answer is, that rheumatism is a 'specific disease,' and by this all its peculiarities as to pathology and treatment are supposed to be accounted for. But I suspect that this expression is often used without any very 'specific' meaning. If it be intended to intimate that rheumatism is not identical in its phenomena with various other inflammations, it is unquestionably very true; but the same observation holds good equally with regard to the inflammation of numerous other textures, as well as of those implicated in rheumatism. Pleuritis is manifested by different general symptoms, and different organic changes from bronchitis,

and pneumonitis is in these respects different from both. Inflammation of the skin differs from that of cellular tissue, that of veins from both. . . . . I say that the difference between the inflammation of the fibrous textures in acute rheumatism, and that of any other texture which may be assumed as a standard of comparison, is not greater than between such standard and various other inflammations which might be named. Again, if by 'specific' be meant that there is anything in the exciting cause of the disease different from that of other inflammations, there is obviously no ground for the assumption." (p. 30.)

There is some truth in all this; yet, as regards the existence or non-existence of some peculiarity in rheumatic inflammation of fibrous textures greater than can be presumed to depend on peculiarity of tissue, the question is neither fairly stated, nor logically argued. The difference between the symptoms of the several other diseases which are contrasted, consists in the nature of the pain, the character of the products and of the fever, and the functional disorder of the organs which are immediately concerned; and in these particulars only can they, or any of them, if the proposition be confined to its proper terms, be justly compared to rheumatism. To maintain that any other phenomena that belong to the latter, do not entitle it to be considered as different from the others to a greater degree than might be anticipated from the kind of texture which it affects, is a mere petitio principii. Are we to make no account of hereditary predisposition, of the acid perspirations, of the urinary sediments, and of the shifting of the local symptoms from joint to joint? The same laxity of logic which would assign so great a scope to diversities in the symptoms of simple inflammation in different tissues, merely because different tissues, would suffice to prove the converse equally, viz., that a wide diversity in the symptoms is enough to establish a difference in the tissues which may be affected, and therefore that the peritoneum and the pleura are dissimilar textures. Bouillaud, who reasons on this point in much the same strain as Dr. Macleod, attempts to get rid of one embarrassing objection in the following way. Referring to the fluctuation of the symptoms of acute rheumatism from joint to joint, he explains it thus: "The influence of the exterior cause which has produced the rheumatism primitively, acts on a part hitherto respected, and in this case it is not, as is said, the rheumatism of one diseased joint which influences that which is healthy, but this latter coming to be strongly affected, the other is disengaged more or less, in conformity with the grand law of Hippocrates: duobus doloribus simul obortis non in eodem loco, vehementior obscurat alterum." If this grand law were in full operation in acute rheumatism, we apprehend that instead of the frequent and remarkable fluctuations which occur, the evil which had made an effectual lodgement first, would be more tenacious of its position, would keep in check the pretensions of another, and not yield so often at the first brush, like the warriors of the celestial empire. We may add, that we have seen reason to believe that the occurrence which Bouillaud denies does sometimes happen in rheumatism; that a diseased joint excites rheumatic symptoms in others. Thus we have known intense acute rheumatism of a knee-joint, attended by acute pains in the contiguous articulations of the ankle and hip, which ceased almost immediately on the more considerable affection of the knee being relieved by local remedies. If, according to Bouillaud and Macleod, acute rheumatism

differs from other inflammatory diseases merely in being an affection of the fibrous tissues, we wonder whether we should not number among the causes of rheumatic fever the ancient operation of the rack. We offer this conjecture because Bouillaud objects to the argument against the doctrine in question which has been founded on the absence of the tendency to fluctuation of the symptoms when a single joint only has been injured by external violence. If mechanical injury of numerous joints be incapable of producing rheumatic fever, there must be two kinds of inflammation liable to affect those parts; and before this can be received as an unsound argument, on the ground that the causes are different, it must be shown that there is something nearly as different in the phenomena of pleurisy, or peritonitis, from wounds, and from cold, as there is in rheumatism from cold, and simple inflammation of the fibrous textures from mechanical injury.

Dr. Macleod's opinion of the nature of rheumatism, above quoted, is curiously limited by the following sentence: "But I would be understood as speaking at present of the early stage alone of acute rheumatism, because if this has been allowed to pass, various changes in the pathological condition supervene, requiring other and often dissimilar treatment." Dissimilar, we presume, from what is required in other inflammations. In what pathological condition do these various changes occur? In that of the system generally, or of the joints? It is manifestly not in any extraordinary product of the inflammation, for none such is known to be formed. It must be therefore a change in action or disposition of the part, or of this and the system generally. From this follows the strange doctrine, that the inflammation is in the early stage simple, and like other inflammations; a little later peculiar, and unlike them. These views appear to have been suggested by the results of the treatment at different periods of the disease; the author having found acute rheumatism amenable to bloodletting and the other ordinary means of subduing inflammation, when treated by these at the commencement, seems to have concluded that at this stage acute rheumatism differs not from other inflammatory diseases that yield to the same remedies. This is a mode of reasoning by no means uncommon; but, surely, very far from being correct. For if all inflammatory diseases that yield to the same remedies are to be deemed for *that* reason identical in their nature, for the same reason all other diseases that yield to the same remedies must be concluded to be similar—an absurdity which needs no illustration.

The best treatment for rheumatic fever, Dr. Macleod conceives to be the ancient practice of *bloodletting* and *purging*.

"In well-marked cases of rheumatic fever, within the first week of their onset, and in individuals of the average degree of robustness, from twelve to twenty ounces of blood may be abstracted with advantage, several successive times, in the course of five or six days. In judging of the propriety of repeating the venesection, the three points chiefly requiring to be attended to are, the state of the blood, the character of the pulse, and the effect produced upon the rheumatic pains." (p. 32.)

He does not think the existence of the buffy coat sufficient of itself to warrant a repetition of the evacuation; but a loose coagulum, without the buff, he esteems a sufficient reason for avoiding venesection, even

though the attack be otherwise acute. When the pulse loses its bounding character after the first abstraction of blood, he has not found further depletion necessary. The cessation or very great diminution of the pains, he thinks, warrants the omission of further use of the lancet; and he would avoid pushing the depletion further if no relief whatever resulted from bleeding practised once, or at most twice.

The *purgatives* he has found to answer best are from three to five grains of calomel, administered at night, and senna and salts in the morning.

"This discipline ought generally to be repeated on several successive days; indeed, throughout the whole course of a case of acute rheumatism, the due evacuation of the bowels ought to be an indication never lost sight of; and in many cases where the attack is comparatively mild, this is the only form of depletion required." (p. 34)

These recommendations are in the highest degree important for the speedy removal of the disease, whether mild or severe; and the custom of some practitioners, who avoid purging from fear of giving occasion to injurious exposure of the person, cannot be too strongly reprobated.

"By the joint use of the expedients above mentioned—namely, bleeding and purging—acute rheumatism in a certain number of cases may be cut short at once; that is, within two, three, or four days; and I have more than once seen it completely and permanently removed within twenty-four hours, even although ushered in with great severity, and attended by much swelling and redness of one or more joints. If it be objected that the proportion of such very rapid recoveries is small, I readily admit this; but I would ask in return, by what other means a like number of cures within a similar period can be effected." (p. 34.)

On turning to the tabular view of the results of this treatment, in a subsequent chapter, we find the following remarks on it.

"It thus appears, that of the 206 cases of rheumatic fever, 148 were discharged cured within a month; and when it is borne in mind that it was a rule rigidly enforced not to send out patients who have had acute rheumatism as soon as they cease to complain of pain, we may safely assert, that the number above specified was cured within three weeks; 110 within a fortnight, and 60 within eight days. In a small number, perhaps one-eighth of the whole, the disease was absolutely cut short at once within two, three, or four days, and in five or six cases it was (even though accompanied by much swellings and redness of one or more joints) completely arrested within 24 hours." (p. 153.)

These statements give us no exact idea of the duration of the disease, but only of the time the cases were under treatment; so that in estimating the duration of the cases we may dispense with the deduction made for their residence in hospital after the disease had ceased, which would probably not exceed the time that had elapsed between the date of the seizure and admission. Our estimate of the advantages of the treatment recommended need not, however, be influenced by these considerations, for others have doubtless founded their conclusions on grounds similar to those of Dr. Macleod. That the success of this treatment is unparalleled, by what has been experienced by others who have treated acute rheumatism, we must hesitate to admit. Dr. Hope, who confined his treatment to one bloodletting, and that only in some cases, followed by an evening dose of calomel and opium, and a morning purgative draught, found only exceptional cases to remain under treatment for more than a week; Dr. Corrigan mentions nine days as the average duration of the

cases which he treated with large and repeated doses of opium; Bouillaud found from one to two weeks the usual duration of the disease, when treated by copious and repeated bloodletting alone; and Dr. Law, with bloodletting and colchicum, effected his cures mostly in a fortnight. Now the majority of Dr. Macleod's cases extended beyond the second week, even when the subtraction of a week is allowed for mere residence in hospitals after the cures were effected.

Of *opium* Dr. Macleod speaks in the following terms:

"The remedy, which in acute rheumatism stands next in importance to bleeding and purging, is opium. If by the means already mentioned the pain has not been very much mitigated within forty-eight hours, or I should rather say if any pain then remain, opium should be had recourse to in doses sufficient to give relief. . . . . On the average, two grains in the course of the twenty-four hours are sufficient; and I have been led to think that the solid answer better than the liquid preparations. How much opium may be taken with impunity, or even with advantage, so long as its usual effects are counteracted by the presence of pain, I am not prepared to say; but I have often given four, and sometimes six grains in twenty-four hours." (p. 35.)

In those limited quantities opium has long been given in this disease, but we believe without producing all the remarkable relief to suffering which a more liberal use of it is calculated to afford. We are indebted to Dr. Corrigan for reviving the practice of Pearson in respect to the administration of opium; and, howsoever the treatment may be varied in other respects, the physician who has had opportunities of witnessing the very striking decrease of suffering which follows almost immediately, the reception of a second or third considerable dose of opium in acute rheumatism, will rarely omit the administration of it in the way recommended by Dr. Corrigan. This physician states that he has known two hundred grains taken by one patient in fourteen days, and without narcotism. Ten, twelve, and even fifteen grains a day we have known to be taken without any injurious effect, and with much relief to pain. Notwithstanding what has been said to the contrary by the physician to whom we have just referred, the tendency to produce constipation is an objection in many instances to the practice in question. Constipation is not indeed an invariable consequence, but when it does occur it has appeared to us very materially to protract the disease when of a severe character originally. In order to derive the full benefit of opium in rheumatism, without the disadvantage alluded to, its use should be so far suspended from time to time as to allow of the bowels being freely evacuated every second day.

Of *calomel*, given so as to affect the mouth, Dr. Macleod has no good opinion. He has repeatedly seen the disease continue after the mouth has become affected; and we may add that the impregnation of the system with mercury has the disadvantage, besides, of bestowing a liability either to relapse of the acute disease, or to protracted pains.

Of *diaphoretics* and of *cinchona*, the author also expresses himself unfavorably. The former, however, have the testimony of general experience in their favour in recent and mild cases; and the latter has found more advocates than Haygarth. It is certainly one among the many anomalies of acute rheumatism that bark does sometimes, especially after a copious bloodletting, effect a speedy recovery.

Rheumatic affections of the heart. The fourth chapter, and the three which follow, are devoted to the affections of the heart which occur in acute rheumatism. Bouillaud receives his usual lecture on the folly of his claim to the merit of having first pointedly specified the connexion of acute diseases of the heart with rheumatism. The author next adverts to the error which has been often committed of ascribing the affections of the heart to metastasis, and asserts their not unfrequent occurrence even before the joints become affected, and their still more frequent coexistence with the disease in the joints, all of which points have been already fully insisted on by Hope, Bouillaud, and others. So little is Dr. Macleod inclined to ascribe these affections to metastasis, that he says,

"The result of my experience, indeed, would lead me to infer, that if an individual has any given set of joints affected with acute rhematism, such joints are more likely to be relieved if the disease attacks other external parts than if it fix upon the heart. . . . . I have no hesitation, however, in expressing my conviction that the pericarditis supervening during rheumatic fever may more correctly be regarded as an extension of the disease, than as a true metastasis." (p. 45.)

To the opinion contained in the first part of the quotation we must hesitate to subscribe in the absence of detailed proofs. The heart, it can scarcely be doubted, is obnoxious to acute rheumatism very much as a joint is, and if it be so esteemed, the various modes and circumstances in which it may become the seat of rheumatic inflammation may be easily and correctly understood. Sometimes in rheumatic fever a joint may become affected with mere pain, without any other evidence of the inflammation which is existing in others, and, as remarked by Andral and amply admitted by Bouillaud, a similar neuralgic or dynamic affection of the heart may occur, causing much temporary derangement of its action, but without ending in actual inflammation. Sometimes, too, apparently true rheumatism of the heart becomes translated to an external part, just as it may from one joint to another; one instance of which is recorded by Dr. Wells, and another in the Edinburgh Medical and Surgical Journal a few years back. And without doubt, sometimes, just as shifting rheumatism of the joints may become concentrated in one articulation, it may also in the fibrous, or fibro-serous textures of the heart. Metastasis, in the absolute and full sense formerly attached to the word, is not now considered by well-informed practitioners, as necessary to the establishment of rheumatism of the heart, though doubtless it may and does occasionally occur.

Dr. Macleod contests an opinion which has been sometimes maintained, that repeated venesection in acute rheumatism tends to increase the frequency of the affections of the heart. We confess that we have been inclined to concur with Dr. Alison in believing that it does. There will be no little difficulty in establishing either view of this subject, and such evidence as has yet been laid before the public is inadequate to form the ground of a decided opinion. The strongest which can at present be adduced is perhaps to be found in a comparison of the proportion of affections of the heart which occurs in the practice of Bouillaud, and of those, who like him, bleed largely, and of others who adopt a different course of treatment. Bouillaud expressly affirms that these affections occur in

about one half of his cases of acute rheumatism, and he bleeds to a considerable amount daily during the first five days. Hope estimates the proportion in his practice as noticed above, at about one in twelve, and his observations were made on about 200 cases. Dr. Corrigan saw but one instance in numerous cases treated chiefly by opium. Dr. Macleod, whose treatment in respect to bloodletting more nearly resembles that of Bouillaud, has met with a large proportion of rheumatic inflammations of the heart. He tells us that in 226 cases of acute rheumatism (capsular rheumatism being excluded) he noticed pericarditis fifty-two times. In treating of acute capsular rheumatism he says "of a large number of cases of rheumatic pericarditis which have fallen under my observation, only two have occurred where the synovial membranes had been the seat of the disease," (p. 113,) and he gives in the table at p. 137, eighty-one cases of rheumatic synovitis. We have seen that bloodletting was liberally practised in the rheumatic fever, which yielded the large proportion of heart affections: while in the capsular form, he says of this remedy "general bloodletting, so useful in urgent cases of the former (rheumatic fever), is here rarely if ever required." (p. 125.) Now the 226 cases of rheumatic fever presented fifty-two instances of pericarditis, nearer one in four than one in five, as stated by the author; while the eighty-one cases of capsular rheumatism yielded only two instances of pericarditis, about one in twenty. He no doubt ascribes this circumstance of his cases of capsular rheumatism to a peculiarity in the disorder, owing to which the heart is less liable to be affected than in the other acute form; but is nothing to be ascribed to the difference of practice, seeing the conclusion to which the contrast of Bouillaud's practice with that of the other physicians points? It is at least a serious fact that of 226 cases treated by the depletory method nearly one in four should have had pericarditis. The proportion would still be considerable if the other eighty-one cases were added, namely, nearly one in five and two-thirds. It is worthy of notice, also, that pericarditis alone is the affection of the heart specified by Dr. Macleod; and no doubt if the number of cases of endocarditis, which occurs by no means rarely without pericarditis, had likewise been stated, the proportion of cases in which rheumatic inflammation of the heart occurred in his practice would have been considerably augmented. When we consider the great powers of observation possessed by Andral, Louis, and Chomel, their general aversion, at least formerly, to bloodletting, and their having so strangely overlooked the connexion of pericarditis with acute rheumatism, is there not some reason to suspect that Bouillaud has been indebted for his light on this connexion, in a very significant degree, to the great difference of his practice? We do not presume to give a decided opinion in the present state of our knowledge; but we cannot avoid the statement of our conviction, that the subject is in the highest degree worthy of being more thoroughly studied than it has yet been. To the reader who may be biassed by *à priori* considerations, and may view the connexion to which we advert as too unlikely to be worth the trouble of investigation, we would just suggest a consideration of the effect of large and repeated losses of blood on the irritability of the heart.

Of the symptoms of rheumatism of the heart, Dr. Macleod justly remarks that little reliance can be placed on any but those ascertained by

the ear. He distinguishes the stethoscopic signs as usual into two kinds, those of attrition, occurring in the pericardial inflammation, and the blowing sounds or valvular murmurs. Of the former, he says that they have been attributed by some to dryness of the opposed surfaces of the pericardium, by others to the roughness caused by the concretion of effused lymph. He inclines to the latter opinion, and with justice, for we may notice that Dr. Stokes was able to limit in a fatal case, by the friction-sound, the spot at which the serous surfaces continued free from adhesion after other parts had become adherent; and in that spot the membranes were covered with lymph. Dr. Macleod's account of the valvular murmurs is as follows:

"In many cases it may be heard all over the region of the heart, but is usually most distinct at points corresponding to the aortic, and to the auriculo-ventricular valves of the left side; that is to say, that where the relative situation of the parts is not changed by previous disease, the blowing sound will generally be best heard by placing the ear, or the end of the stethoscope, at the lower part, and towards the left side of the third bone of the sternum, for the aortic, and a little further to the left for the mitral valve. When the blowing sound is heard with the first sound of the heart, and where it is perceived on placing the instrument over the carotid arteries, it is reasonable to conjecture that it depends upon disease having produced, in the aortic valves, certain changes which cause obstruction to the free exit of blood from the ventricle. If the blowing be contemporaneous with the second sound, and not heard over the carotids, it will probably be found to depend on disease at the orifice between the left auricle and ventricle." (p. 56.)

The errors contained in this passage cannot be passed over in silence. In respect to the rules for distinguishing valvular disease at the mouth of the aorta, there is inaccuracy in the statement which refers to the sound in the carotids. It is not at all necessary that a murmur should exist in these vessels in order to enable us to determine that disease exists at the aortic valves; nor is it by any means a matter of importance that the murmur should be best heard at the point which is specified. The occurrence of the new sound in its greatest degree of development in the course of the aorta is all that it is necessary to ascertain, in order not to render it "reasonable to conjecture," but to entitle us to conclude with certainty that the aortic valves are diseased. Then as to the means of distinguishing disease at the orifice between the left auricle and ventricle, we had imagined that it was a fact now well ascertained, and even familiar to physicians, that a murmur with the second sound is an extremely rare occurrence in consequence of such disease. Every one knows that a murmur with the second sound is not an uncommon circumstance in valvular disease, whether acute or chronic, but it occurs, as all recent writers on diseases of the heart agree in stating, (certain questionable or rare instances excepted) at the aortic orifice, owing to regurgitation. It is now a good many years since the late Dr. Hope, one of the best observers, pointed out the peculiarity which characterizes the regurgitant murmur, and it is questionable if any other ever exists, dependent on disease of the mitral valve. What he discovered and taught on the subject is well known to the profession at large as both easily recognized and singularly accurate, and constant as a ground of diagnosis; namely, that the murmur from this cause is heard the most distinctly over the body of the ventricle, and towards its apex. So

universally are these truths known to all who practise auscultation, that we should have concluded Dr. Macleod to have fallen into the errors of which we have treated thus freely, in consequence of hurry or inadvertence, if similar inaccuracies did not occur in another part of his work. Some of Dr. Macleod's remarks on the character and varieties of the valvular murmur are not very intelligible, for instance, "its general character, where the valves have not been previously damaged so as to admit of regurgitation, is that of a simple bellows-sound, but sometimes it assumes a harsher character, and sometimes a distinctly musical note." (p. 57.) What are the changes which occur when the valves are so damaged as to admit of regurgitation? Do the harsher and musical tones occur when regurgitation takes place or not? And if the former, do they constitute more the general character of the sound than when no regurgitation takes place?

The observations which are made on the signs of effusion into the pericardium are far from being satisfactory. After stating that the cardiac region is liable to present an extended dulness on percussion in pericarditis with effusion, he observes,

"It (the dulness) does not usually assist us in detecting the pericarditis, because, before the effusion can have proceeded so far as to produce an unequivocal augmentation in the surface over which the sound is dull, the disease in all probability will have sufficiently manifested itself by other signs. And again, in that form of pericarditis which attends acute rheumatism, the effusion is most frequently chiefly composed of lymph which, though it may be in quantity sufficient to produce embarrassment in the action of the heart, yet the mere increase of bulk thus produced is not usually to such an extent as to be satisfactorily judged of by percussion. A much more appreciable, and therefore more generally useful sign, in reference to sound afforded by the effusion which takes place into the pericardium in rheumatism, is the sound of the heart itself being observed to become progressively more feeble and more distant, while the general symptoms show that this is not dependent upon mere sinking of the vital powers." (pp. 58-9.)

We cannot go along with Dr. Macleod here: we have been accustomed to believe that a quantity of effusion, of whatever kind, too small to affect the sound on percussion morbidly, will not obscure the sounds of the heart, as Dr. Macleod supposes; nay, it constantly happens that the dulness on percussion is sensibly augmented before the fluid effusion is so abundant as to obscure the sounds or impulse of the heart; increased in intensity, as these commonly are, by the augmented energy of the heart's action. The difficulty experienced by physicians in perceiving, by means of percussion, the existence of a moderate effusion into the pericardium, often, we believe, depends on neglect of the best mode of practising the percussion: without the use of a pleximeter, it is very difficult to mark the limits of a natural or morbid dulness with accuracy; but when the assistance of that instrument is sought, a very moderate deviation from the average limits of a normal obscurity of sound is readily detected. The information which this instrument is the means of yielding is peculiarly valuable in enabling us to form, in many instances which might otherwise be perplexing, a tolerably accurate judgment as to whether the extended dulness results from effusion of fluid, or from increased volume of the heart itself of a chronic kind. Thus an extension

of the dulness upwards is commonly more characteristic of fluid effusion than of enlargement of the heart. It is of great consequence, sometimes, that the physician should know these facts, because cases may come under treatment for the first time when the circumstances necessary for the production of the attrition sounds may have ceased, and others may occur in which they never have existed.

Dr. Macleod does not enter into any important details of the general symptoms which belong to pericarditis, with the exceptions of the peculiarity of expression often witnessed on the countenance, and the occasional occurrence of delirium. The latter is mentioned as having been noticed many years ago by Andral, and subsequently by Dr. Francis Hawkins, Dr. Latham, and Dr. Watson. The symptoms of cerebral disturbance may consist of anxious delirium or wild insanity.

"So far as I know, in all the cases hitherto recorded in which rheumatism of the heart has been attended by symptoms of inflammation of the membranes of the brain, the patients have died, and the encephalon has been found intact, or at least without any unequivocal evidence of inflammation. . . . I have reason to believe, however, that pericarditis may occur, accompanied by cerebral symptoms of the severest character, and still the patient recover under the persevering use of proper remedies." (p. 62.)

Two cases of recovery are detailed, the one having been bled once, blistered on the chest, and having taken calomel and opium with purgatives; the other is stated, more particularly, to have been ordered at first calomel and opium, and after the delirium occurred, three days subsequently, to have had a grain of opium every six hours, the calomel being omitted, because the gums had become sore. The narcotic was subsequently increased until half a grain of acetate of morphia was taken every four hours, until amendment took place, which it did on the sixth day from the commencement of the incoherence. The knowledge that delirium, convulsive twitchings, tetanic spasms, and coma, occurring in connexion with acute rheumatism, indicate pericarditis, is of much consequence in directing the attention of the physician to the true source of the cerebral disorder, the more common symptoms of pericarditis (the physical excepted) being usually obscured by the derangement of the nervous system. Symptoms resembling chorea have been noticed by Dr. Bright, as also occasionally occurring in connexion with pericarditis. Dr. Macleod concludes his notice of these symptoms of cerebral disease with the following remark:

"But there is another affection of the head, altogether different from the preceding, which, nevertheless, I am inclined to think has been confounded with it:—namely, a true inflammation of the brain or its membranes, connected with rheumatism. This, however, in all the cases of it I have ever seen, has arisen in connexion with rheumatism of the synovial membranes, and without any pericarditis. On the other hand, I have never known fibrous rheumatism affect the brain, except secondarily, (I believe functionally,) and after the heart had become implicated." (p. 67.)

The effects of rheumatism on the membranes and substance of the heart, both immediate and secondary, and the common signs of increased bulk of the ventricles, are discussed in too elementary and sketchy a

style to demand particular notice. One statement alone appears to merit a passing observation.

"We may have the aortic valves perfectly healthy, and yet the left ventricle unusually muscular. I think it probable that in such cases the muscularity will be found to consist almost entirely of increased bulk of the columnæ carneæ, and that the mitral valve will be found thickened, or otherwise changed, in such manner as to have required more than usual effort to make it act. Such at least has been the case in several instances of this nature, which I have examined." (p. 81.)

This increased bulk of the columnæ carneæ he ascribes to their increased action, as they have in such cases "to act upon a stiff and unyielding valve." If the most probable opinion of the use of these columnæ be correct—namely, that they contract simultaneously with the rest of the ventricle, thereby to prevent the shortening of the contracting ventricle from giving scope for the valve being pushed by the pressure of the blood too much up into the auricle, we can scarcely understand how their action should be increased by any common rigidity of the valve. It appears more consistent with sound pathology to refer this hypertrophy of the columnæ to the operation of a general law, not of a mechanical but of a vital nature, which operates very extensively in producing hypertrophy of tissues. We have repeatedly noticed eccentric hypertrophy of the ventricles succeed an attack of rheumatism, which had neither interfered with the action of the valves, nor interrupted the passage of blood through the orifices; and have been inclined to ascribe the occurrence to what has been termed the *nutritive irritation*, which is so apt to occur in tissues bordering on those in which chronic inflammation, or acute inflammation imperfectly subdued, had existed; and also in those tissues themselves which had been so inflamed. Examples of this are common in the stomach and intestines.

The treatment is briefly discussed, and after bloodletting, general and local, testimony is given to the efficacy of the common practice of administering mercurial preparations freely in the acute inflammations of the heart.

Capsular rheumatism. In the eighth, ninth, and tenth chapters, the peculiarities of capsular rheumatism are detailed.

"If being different in their seat, in their symptoms, in their terminations, in the affections with which they are complicated, and in their treatment, be sufficient to prove that a distinction ought to be made between two diseases, then is rheumatism affecting the synovial membranes essentially distinct from the form of rheumatism already considered. The seat of capsular rheumatism is in the lining membrane of the joints and bursæ of the tendons; being, in this respect, the same as gout, to which it is, in various respects, very closely allied. The parts most liable to its attacks are the feet and hands, where it is, for the most part, easily recognized by the enlargement of the joints; but the peculiar characters of the disease are, perhaps, most strikingly displayed when it attacks the knee." (p. 92.)

The local symptoms are next described, and the peculiarity of the shape of the affected joints, dependent on distension of the synovial capsule with fluid, pointed out. The circumscribed swelling thus produced affords a contrast to the smaller and more diffused tumefaction of the form of rheumatism already described.

"Nor are the histories of the two diseases less remarkable for their points of difference. The capsular rheumatism is infinitely more persistent—affecting, for the most part, several joints, but generally becoming more especially fixed in a limited number, to be ultimately completely localized, and in a certain proportion of them to produce permanent changes of structure, or even disorganization of the parts." (p. 94.)

After describing the common appearances of inflammation on the synovial membrane, and the increased quantity of synovia found in the joints when death occurs during the course of the acute disease—the distortions and nodosities, which result in cases which have been prolonged, or have frequently relapsed, the author proceeds:

"Another appearance which sometimes presents itself is peculiar: the surface of the cartilages of the joint seems as if sprinkled over, in spots of greater or less extent, with a white powder, or smoothly painted of the same colour. When we try to scrape this off, we perceive that it is not merely superficial, but pervades the substance of the cartilage. The form of this deposit is thus considerably different from that which takes place in acute and well-marked gout, wherein it usually exists in small, irregular, detached portions, or as a kind of exudation which may even escape externally. (pp. 93-6.)

These deposits in capsular rheumatism have been found, by Dr. Macleod, to consist, like those of gout, of lithate of soda, although Dr. Chambers found in several instances of old synovial rheumatism, that they consisted of carbonate of lime. Another change produced in this form of rheumatism is suppurative disorganization of the affected joint. Several cases are given in confirmation of the assertion, that such an effect may result from rheumatic inflammation. These, added to the cases published by Chomel, (who, however, does not recognize them as rheumatic,) Piorry, Bouillaud, Carswell, and Malle, fully justify the conclusion that suppuration does occasionally result from rheumatic inflammation of a joint.

The merit of having distinguished this from the other form of rheumatism is ascribed to Dr. Chambers; and though we find in the writings of Störck special reference to the rebellious nature of rheumatism with effusion into the joints, most of the other peculiarities of capsular rheumatism have been overlooked by more recent writers. That the distinction is both well founded and important in several particulars there can be no doubt. In regard to some of the characteristics specified in the quotations, every practical physician must have had occasion to remark with Bouillaud, that "in general, all other conditions being equal, the *fixity* and the obstinacy of acute articular rheumatism are in an inverse ratio to the number of the articulations affected." We may notice the statements of Chomel on some of these points also, as additional evidence of the propriety and importance of the distinction in question, so far as they go. "In certain individuals," he says, "there remain irradicable traces of the disease: tophaceous concretions for example; sometimes even a state of morbid and permanent flexion of the articulation, as if a sort of anchylosis. But this never, almost, happens after a first attack, nor especially in a case of general articular rheumatism. These alterations occur particularly after many relapses, after the passage of the disease into the chronic state, and above all in the case of partial articular rheumatism." (Leçons, t. ii. p. 252.) Partial articular rheumatism, as

every physician knows, when of considerable intensity, is almost always of the capsular kind.

Dr. Macleod states that the capsular rheumatism "occurs in persons who are of a feeble or debilitated constitution; or if it appear in the more robust, it is generally after some considerable and continued source of mental or bodily exertion," (p. 108.) It is also found to supervene upon gonorrhœa, and other venereal affections, but with the latter almost exclusively, "where long-continued courses of mercury have been adopted." (p. 109.) While detailing the general symptoms he mentions that a case occurred to him in which the copious sweats deposited a pulverulent substance on the skin, which proved to be lithate of soda. Van Swieten also notices the occasional occurrence of pulverulent deposit on the skin in rheumatism.

When inflammation of internal parts occurs in connexion with capsular rheumatism, which is a somewhat rare occurrence, it is stated that such inflammation is different from that noticed in rheumatic fever, in being a true metastasis, and not to the heart, but to the pleura or membranes of the brain. "Nor are the immediate results of such internal inflammation less remarkable; for while very few, if properly treated, die during the first onset of rheumatism of the heart, the mortality holds a very high ratio where the synovial inflammation becomes transferred to the serous membranes either of the head or chest." (p. 114.) When the membranes of the brain become affected, Dr. Macleod believes that the occurrence took place much more frequently in the advanced than in the early stage; and in cases which present the disease in a fixed form in but one or two joints. The disease in the joints may continue stationary for weeks, or even months, and ultimately the swelling may diminish without any obvious cause; and "whenever, under such circumstances, any (even the slightest) head symptom presents itself, it must be viewed with the greatest suspicion." (p. 115.) It is unnecessary to enumerate the symptoms of cerebral disease which may occur in these circumstances, as they have nothing peculiar in them; the important point is to know that such symptoms occurring in such a connexion, are of the most serious import. Several illustrative cases are detailed, and in the examination of the parts within the head after death nothing was noticed of a kind different from what occurs after ordinary meningeal and cerebral inflammation.

The pleuritic complication which is apt to occur in capsular rheumatism happens in much the same circumstances as the other. The products in several instances of this kind of pleurisy which were witnessed by Dr. Macleod were serum and pus in much abundance. In one reflection connected with this subject Dr. Macleod is, we apprehend, not altogether correct. He speaks of the pleurisy which sometimes occurs in rheumatic fevers as a mere extension of inflammation from the pericardium, while that of the capsular rheumatism is stated to result from metastasis primarily to the pleura. Now it is quite certain that pleurisy sometimes occurs in rheumatic fever without any affection of the pericardium; and we do not know any reason to conclude that, when it coexists with pericarditis, it is dependent on extension of inflammation from the pericardium; on the contrary, the structure of the covering of the lung would induce us to presume that it would be liable to be at-

tacked by rheumatic inflammation, independently of such extension, because it is truly a fibro-serous membrane, as originally maintained by Basin.

Dr. Macleod has not seen any other visceral diseases result from metastasis of rheumatism than those which he has mentioned, and they are doubtless rare. Andral has recorded a case of apparent metastasis to the peritoneum; and Recamier, we think, to the intestinal mucous membrane. Rheumatism of the uterus, of a very unequivocal kind, is also treated of by Dezeimeris.

Local bloodletting is in this form of rheumatism mentioned as more frequently required than general depletion. Colchicum is considered "the great remedy," internally. A drachm of the vinum colchici is recommended to be given in the course of twenty-four hours, the morning dose being combined with a saline purgative. The remedy is to be discontinued if there be, "1st, the cessation of the pain; 2d, a depressed state of the nervous system; 3d, the occurrence of purging; 4th, the disappearance of the lithates from the urine." Opium and calomel are not recommended. Iodide of potassium receives its due meed of praise, for its virtues in relieving pain, and otherwise greatly benefiting cases in which the acuteness of the attack has been subdued. He thinks doses of two grains three times a day secure, in the majority of cases, all the beneficial effects of the remedy. The affections of the brain, &c. are to be treated on general principles.

Of the capsular rheumatism it is said,

"According to the preceding table (of 81 cases,) capsular rheumatism would seem to be much more prevalent among men than women, (47 to 34;) much more equally diffused over the different periods of adult age than the form of the disease first described; and much more prone to affect persons under forty than genuine gout is. At the same time, it is more the disease of middle life than either rheumatic fever or muscular rheumatism; from forty to forty-five years of age, giving us twenty-two out of eighty-one cases or rather more than one fourth, which is a much larger proportion than holds good with respect to either of the others." (p. 158.)

Another difference between the capsular rheumatism and rheumatic fever is found in the duration under treatment.

"Of the cases of rheumatic fever, one half were discharged cured in three weeks; of the cases of capsular rheumatism, more than half remained in hospital at the end of six weeks." (p. 159.)

In the remainder of the work there is little that is particularly worthy of notice, and we conclude with the following account of the muscular variety of rheumatism.

"After the middle period of life, as we have seen above, the tendency to rheumatic fever progressively and rapidly diminishes. Not so with regard to the muscular form of the disease, which is spread more equally over the whole period of adult age: of the acute fibrous cases, only eight occurred between the ages of fifty and sixty, rather more than one twenty-eighth part of the whole number; whereas the same period gives nine cases of the more chronic muscular form, being very nearly one ninth of the whole." (p. 160.)

Art. XIII.

Bidrag til Kundskab af de endemiske Hudsygdomme. Af Brigadelæge Dr. Hjort. Förste Stykke.—*Christiania*, 1840. 8vo, pp. 25.

Contributions to the Knowledge of Endemic Diseases of the Skin. By Dr. Hjort, Brigade-physician in Christiania.—*Christiania*, 1840. (*Reprinted from the "Norsk Magazin for Lægevidenskaben."* Vol. I. No. I. 1840.)

This is the first of a series of papers on the diseases of the skin endemic in Norway, the investigation of which has been undertaken by Dr. Hjort. The essay does infinite credit to the author; and as it gives a view of an ill-understood disease very different from any heretofore communicated to the profession, and we doubt not, much more accurate, we shall transfer the greater portion of its contents to our pages, in the form of an analysis, without any comment. On a future occasion when we have had all Dr. Hjort's views and opinions before us, we may enter into a more critical examination of the subject. The object of the author in the present essay, is to give a more precise and complete description of the radesyge, or Norwegian leprosy, than has been before attempted; little or nothing being said on its pathology and treatment. The disease, as is well known, is of frequent occurrence in Norway, but is rarely to be met with south of the Baltic. The author has for the last seventeen years been engaged in the close study of the radesyge, as it occurs in the provinces and capital of Norway, and from having held for several years the post of assistant-physician to the hospital for skin diseases in Christiania, he has enjoyed peculiar facilities for contemplating this disease. Lately also, in compliance with the wishes of the Norwegian government, he has visited many parts of central and of southern Europe, for the purpose of making himself acquainted with those maladies which have been by some writers considered as closely allied to radesyge, and by others have been actually identified with that affection. The result of this uncertainty has been, that several very different disorders have been confounded together under the common name of radesyge; syphilis, elephantiasis græcorum, scrofula, and scurvy, having been all at one time or other described under that appellation. Amid such a confusion of terms and symptoms, Dr. Hjort has ventured to coin a new name for this disorder, and adopted from Hippocrates the term Thæria,* from θηριον (ελκος) a malignant ulcer. The term lepra has been already applied to three or four different diseases, and as that of radesyge is merely provincial, he proposes to raise this disorder to the rank it merits in nosology, by affixing to it this classical appellation.

General symptoms of radesyge (thæria). The individuals affected are usually of the inferior class, and after their health has for a longer or shorter period been declining without any marked symptoms to localize the disease, the skin, and occasionally the subjacent cellular tissue, is attacked with inflammation, which is chronic in its progress, and tends invariably to suppuration, after which, the pain before experienced either altogether ceases or at least is greatly alleviated. At the first appearance of the inflammatory symptoms above alluded to, there is formed an in-

* We follow the orthography of the author, although the Latin derivative of θηριον, according to the usual rule, should be *Theria* not *Thæria*.

durated, ill-defined, blueish-red tumour in the substance of the skin, which after a short time softens and forms an ulcer of irregular shape, with rounded edges, and bordered by a diffuse redness, shaded with blue and gray, and passing from a rose-red to a violet or a lead-gray colour. The surface of the sore is unequal and granulating, and secretes a greenish-yellow inodorous pus, which when exposed to the atmosphere, concretes into hard, yellowish-green or blackish-green scabs. After the ulcerative process has destroyed the affected portion of the skin, and perhaps also the subjacent cellular tissue, healthy granulations push forth from the bottom of the sore, and these at length form a somewhat irregular, but very firm cicatrix. In the mean time new tumours have appeared in other parts of the skin, and these sooner or later run a similar course. In this manner the disease, when left to itself, proceeds, and may continue for months or even years without causing any serious injury to the patient, except in cases where it attacks the nose or pharynx, or where necrosis is caused by periostitis on the adjacent bones.

It is not more than a hundred years since this malady was first noticed in Norway and Sweden, and it has since then been detected on the Baltic coasts and on the northern coast of the Adriatic.

Premonitory symptoms. The outbreak of the disease is almost always preceded by catarrhal, rheumatic, or nervous affections, whilst the intellect is obscured, the individual becoming in a marked manner more dull and obtuse than before. But the most decided preliminary symptoms are flying pains in the limbs, which however are seldom so severe as to disturb the sleep of the patient, or to prevent his continuing his daily labour. Such pains often concentrate themselves in certain parts and organs of the body, as in the head under the type of hemicrania, or as pain darting from the auditory passages to the neck, or as pains in the shin-bone and forearm, where they are generally accompanied with swelling of the superficial portions of the tibia and ulna. Rarely are they observed to increase at night; on the contrary, they often disappear when the patient is warm in bed. In general they cease altogether, or at least greatly diminish in intensity when the local affection breaks out in some part or other of the skin; and such local affections usually appear in the neighbourhood of those parts where such pains have previously concentrated themselves: thus, after hemicrania, ulcers form upon the head; and sores show themselves over the tibia and ulna after pains in the leg and forearm. But to this general rule there are many exceptions, the skin being often affected only in a single spot after flying pains had pervaded the whole body. The pains in the tibia and ulna are, among all the chronic affections preceding the outbreak of radesyge, those which merit the most attention. After the patient has for some time complained of lancinating pains in the bone, an even, hard swelling presents itself on its most superficial portion, which may remain stationary for years without any alteration in the structure or colour of the skin. But when the ulceration peculiar to the disease has shown itself in any part of the body, the pains in the periosteum generally subside, although the above-mentioned enlargement of the bone continues throughout life. When the skin covering the superficial portion of the tibia is attacked by the disorder, the subjacent bone is sometimes affected with necrosis, but this is by no means connected with the superficial elevation of the bone before alluded to.

The first symptoms of radesyge often appear as sequelæ of acute disorders, such as rheumatic fever, bronchitis, pleurisy, &c. But these maladies must not be looked on as proximate causes, but merely as eliminating the germ of the disease previously existing in the body. Occasionally Dr. Hjort has observed the ulcers of radesyge to vanish at the commencement of an acute attack, and to reappear on the termination of the attack.

Particular symptoms of radesyge. Although the disorder consists principally of the above-described inflammation and ulceration of the skin and of its subjacent cellular tissue, yet this morbid process varies so much in its extent, seat, and progress, that it is necessary to specify more at length the various forms under which this remarkable disease presents itself. For this purpose the author divides the malady into two great groups, according to the symptoms, namely, 1st, Affections of the external skin; 2d, Affections of the internal skin or mucous membrane.

A. Affections of the external skin. The principal seat of the disease is always the deepest layer of the skin (corium), but the subjacent cellular tissue is usually more or less affected. Upon the amount to which this tissue participates in the disease, depends much the appearance which it assumes. In the most superficial forms of the disorder, the skin and the cellular tissue in its immediate neighbourhood are alone affected, and thereby it so nearly approaches in character to a pustular disease, that the author has proposed for this form the name of *thæria pustulosa*; or, rather, *pustuloides*, as real pustules do not actually appear, but small abscesses supply their place. In a second form of radesyge, the subcutaneous cellular tissue is involved in its whole thickness, and then forms tubercles beneath the skin. This Dr. Hjort names *thæria tuberculosa*. The third variety he names *thæria phlegmonosa*, as in this variety the skin and cellular tissue to a great depth are affected, so as to cause much swelling of the parts involved, but the surface of such tumours are seldom uneven as in the tubercular form of the disease.

1. *Thæria pustulosa, seu cutanea.* Its distinguishing characteristic is a round ulcer of the size of a pea, which gradually destroys the whole thickness of the skin, and is covered with a firm and dense scab. When left to themselves, these ulcers may require weeks or months to run their complete course to cicatrization. Occasionally slight itching and pain reveal the presence of these pustules; but they often exist unnoticed, till discovered by the eye of the patient or of his medical attendant. The entire thickness of the skin at first assumes a blueish red colour, and though not elevated above the surrounding healthy tissue, it is somewhat harder to the touch. A single point in this injected portion now begins to soften, but yet it does not raise the superincumbent skin after the manner of an abscess; the presence of pus is only revealed by an indistinct fluctuation. The skin above this small abscess becomes thinner, and at the same time shrivels up in the centre till it becomes a hard firm scab, which constantly increases in thickness over the subjacent purulent matter. Fresh healthy granulations now begin to shoot forth from the bottom of the abscess, and these form, with the scab that still remains, a firm cicatrix, after which the scab or crust falls off. According to the mode in which these pustules are grouped together, Dr. Hjort has bestowed

upon this form the names of thæria pustulosa sparsa, thæria pustulosa figurata, thæria pustulosa area.

1. In the first variety, *thæria pust. sparsa*, the ulcers are solitary, and occur chiefly on the head and back.

2. *Thæria p. figurata* is the most frequent form, and the pustules are here grouped as in impetigo figurata. Such groups are to be observed on the forehead or cheeks, and still more frequently on the back, breast, or on the extremities in the neighbourhood of the joints. These patches vary in extent from two to six or eight inches; their form is irregular, never presenting the distinct circles of the serpiginous syphilitic eruptions. The pustules make their appearance close to each other, and spread outwards as from a common centre, yet occasionally pustules are developed in parts that have already been affected. The cicatrices are firm, white, and uneven, their surface being traversed by numerous white bands, whilst their circumference is so irregular as to have been compared by Rust, of Berlin, to land on a map surrounded by sea.

3. *Thæria pust. area.* In this rare form of the disease, and of which Dr. Hjort has seen but five or six examples, the skin is infiltrated in one continuous extent of several inches in diameter. When so affected it is of a deep blueish, red, or lead-gray hue, and though hard as wood to the touch, is not sensibly elevated above the surrounding healthy skin. Upon this surface pustules subsequently appear, which remain perfectly distinct one from the other, and leave behind them small round scars, which appear like drops of milk scattered upon the skin after it has returned to its healthy state. This variety has been chiefly observed upon the loins, buttocks, and forearms.

II. *Thæria tuberculosa seu subcutanea.* This form is by far the most frequent of all, and may serve as a prototype of the disease. It first exhibits itself in the form of tubercles, which are elevated two or three lines above the surface of the skin, and are in general of a dirty-white or lead-gray colour, and somewhat harder than the surrounding healthy tissue, but their colour remains sometimes unaltered until the process of ulceration has commenced. The diameter of these tubercles varies from that of a hazelnut to that of a walnut, their form is generally round, yet their circumference is never accurately defined. Such tubercles may exist unaltered for weeks or months, and then begin to soften from their centre, the superincumbent skin becoming daily thinner, till an ulcer appears, which seldom attains the diameter of more than half an inch. These ulcers are somewhat rounded in form, but never present the circular appearance of syphilitic sores, and their borders appear obtuse, though they may at the same time be deeply undermined. These ulcers are from two to three lines in depth, and their surface secretes the peculiar yellowish-green pus which, when exposed to the air, concretes into hard black scabs. The cicatrix is gradually formed by fresh granulations shooting from the surface of the ulcer. The tubercles of radesyge are seldom solitary, but generally in groups, where they may be observed in various stages of development at the same time, which gives to the skin in the parts thus affected a most irregular and variegated appearance. This form of the disease is frequent on all parts of the body excepting the palms of the hands and soles of the feet, but is most commonly ob-

served on the loins and extremities, and particularly (on the anterior surface of the tibia) from the knee to the ankle.

III. *Thæria phlegmonosa seu exedens.* The hitherto-described forms of Radesyge have their seat chiefly in those parts of the skin which lie contiguous to bones, tendons, or ligaments; but this variety appears by preference in the most fleshy parts of the body, as in the cheeks, the mammæ, the nates, or the forearm. In such situations, the skin along with the entire subjacent cellular tissue swells up for the space of several inches round, the tumefied part being in general hard and resistent to the touch, but not painful on pressure, and the colour remains constantly of a deep blueish-red. The ulcers formed in this variety are often many inches in circumference, their surface is extremely irregular, and secretes a greenish-yellow inodorous pus, which concretes into the usual scabs on the edges of the sore, while the copious secretion from the centre prevents there the formation of the usual crust. In the mean time large portions of cellular tissue are thrown off by suppuration, and occasionally this morbid process insinuates itself between the muscles and ligaments, leaving them bare and as it were dissected at the bottom of the wound. The cicatrices of these large ulcers are naturally deep and irregular. By careful treatment they may occasionally, after having remained open for years, be closed in the space of a few weeks, but the cicatrix is then peculiarly deep, from the rapid contraction of the skin in healing. This form of the malady often attacks the whole leg from the knee to the ankle, and the limb then presents a most remarkable appearance, not a little resembling that of a limb affected with elephantiasis, from the innumerable hard elevations that form in the cellular tissue beneath the skin, and which are often of the size of a hen's egg or more, whilst the skin retains its normal colour and consistence, except that it is distended by the exceedingly hard tumours beneath.

Dr. Hjort here speaks of the mode in which the osseous system is effected in radesyge. In some instances the pains in the long and flat bones do not remit on the appearance of the ulcerative process in the skin. The tumefaction of the periosteum increases, and this membrane is gradually detached from the subjacent bone, and fluctuation is perceptible in the centre of the tumour; the skin, at first natural in colour, gradually becomes of a blueish-red hue, ulcerates, and at the bottom of the sore the bone appears denuded of its periosteum, and a considerable portion of it is frequently detached by necrosis. In general the long bones are affected simultaneously with the skin and cellular membrane. This often occurs in the second form of the disease (thæria tuberculosa), the periosteum becoming affected where it lies nearly in contact with the skin, as on the forehead, on the zygomatic arch, on the cheek, or on the ulnar portion of the forearm. The caries that ensues is quite superficial, terminating with the loss of a few thin lamellæ of bone.

B. Affections of the mucous membranes. Within the body, the disease attacks the mucous membranes lining the nose, the mouth, and the pharynx; it has rarely extended itself to the air-passages. The progress of the disorder is similar to that in the external skin, except that it is somewhat modified by the peculiar properties of the mucous membrane in different parts. Under the titles of, 1, Thæria faucium; 2, Thæria

cavitatis oris; 3, Thæria cavitatis nasi,—Dr. Hjort gives a full description of these peculiarities, of which the following are the principal features:

Thæria faucium. Next to the external skin, the fauces are, of all parts of the body, the most liable to be attacked by the radesyge. Out of 368 individuals labouring under this disease, 125 suffered from the affection of the fauces, and the site of the disorder was chiefly in the uvula and in the velum pendulum palati. In a few cases the progress of the disorder was subacute; the velum pendulum palati and uvula swelled and became of a dark violet erysipelatous hue, and the patient complained of some obstruction in deglutition, but remained free from fever or disorder of the gastric organs. After the lapse of two or three weeks, a yellow point showed itself in this part, as the commencement of ulceration, which then rapidly advanced, till it destroyed the uvula or perforated the velum. The ulcerations thus formed are of irregular shape, and uneven surface, and from the latter is secreted a yellowish green pus. They resemble not a little the abscesses which form in the throat from quinsy, but in radesgye the ulceration continues to spread, unless checked by appropriate treatment, until it has destroyed the whole or a large part of the pendulous palate. The disorder having run the above described course, cicatrization takes place by granulations shooting from the surface of the sore; the purulent matter diminishes, till merely a colourless mucus is secreted; and lastly, there is formed a firm but extremely irregular cicatrix. The course of the disease is sometimes absolutely chronic, the symptoms being as above described, but requiring months or years to accomplish that which occurs in a few weeks in the subacute form of the disorder. The colour of the affected portion is in such cases a blueish-red, and the pain so slight that the patient is not aware of the existence of the disease in the fauces, till a great loss of substance materially affects either the speech or the deglutition. The mucous membrane of the pharynx is seldom affected unless the disorder prevail at the same time in the pendulous palate. The appearances in the pharynx are similar to those above described, speech and deglutition are of course much affected, and occasionally Dr. Hjort has seen caries of the vertebræ of the neck supervene from extension of the disorder to their periosteum.

2. *Thæria cavitatis oris.* The hard palate is here the part most generally affected, but in rare instances the disease has been observed upon the tongue, and once only on the inner surface of the cheeks. The course of this form of the malady does not differ from that above described, but the periosteum always suffers in the affection of the hard palate, and portions of the bones are frequently separated by necrosis, so as to leave a passage open between the mouth and nose. The disease shows itself in the hard palate as a firm blueish swelling, which after a considerable period runs on to ulceration. When the bony portions have come away, the ulcer often heals, but imperfectly, so that a cavity, or even a false passage to the nose remains. This is also covered with fresh mucous membrane, and as the patients sometimes do not seek assistance till the malady has advanced thus far, a medical man might easily believe such an opening to be congenital. Dr. Hjort has seen one case where a fistulous opening, whose diameter did not exceed that of a mustard seed, passed quite through to the nasal cavity. In rare instances, the malady has attacked the alveoli of the teeth.

3. *Thæria cavitatis nasi.* In this variety the ulceration has its seat in and usually perforates the septum narium, and occasionally the end of the nose sinks in from complete destruction of that part. It has also been observed to affect a portion of the Schneiderian membrane covering the septum osseum, and to cause necrosis of the bones of that part. In 368 cases of radesyge this form of the disorder occurred in 73.

Finally, Dr. Hjort maintains that the above-described disorders are to be considered as one and the same malady; and this assertion is based upon the following grounds:

1. These various forms of disease have their seat in analogous tissues, namely, in the internal and external skin, and in the subjacent cellular membrane; and the affection of the osseous system occurs either primarily as a precursor of the radesyge, or secondarily in consequence of the extension of the cutaneous disorder.

2. The disease constantly tends to ulceration, which in all forms presents the peculiar characters of radesyge.

3. The course of these affections is generally chronic, and they are seldom accompanied with much pain; nor do they exercise any peculiar influence upon the constitution of the patient.

4. Several of the different forms of the disorder may be present at the same time in the same individual. Where a person has been frequently affected with the disease, the succeeding attacks may often appear under a different form from that under which the disease first manifested itself.

5. In all parts of the world where Dr. Hjort has observed this malady to be endemic, he has likewise met with all or a greater part of the various forms above described.

6. All varieties of radesyge arise from similar causes. The predisposing causes are a raw cold climate, and the excessive use of ill-cooked and unwholesome farinaceous food (meelspisen, i.e. puddings, &c.), whilst the immediate existing cause is almost always cold.

7. All varieties of radesyge yield to the same plan of treatment, and, according to Dr. Hjort, the specific remedy for this disease is corrosive sublimate.

Art. XIV.

Principles of Human Physiology, with their chief applications to Pathology, Hygiène, and Forensic Medicine; especially designed for the Use of Students. By William B. Carpenter, m.d.—*London*, 1842. 8vo, pp. 680.

Some of our readers may feel inclined to enquire, if after the publication of the native works of Dr. Bostock and of Dr. Alison, on Human Physiology, and after the appearance of English translations of the systematic treatises of Magendie, Müller, and Wagner, another systematic work on Human Physiology is really required? We deem it necessary therefore to settle this question before proceeding to the consideration of the contents of the volume before us.

The work of Dr. Bostock, though highly creditable to its learned author, and constituting a great boon to the medical profession at the time of its first publication, is now evidently lagging behind the rapidly in-

creasing progress of physiological science, and many of its chapters would require to be entirely recast and rewritten to bring it up to the present state of our knowledge. Besides, in many parts of this work we find the authorities of so many authors pitched against each other, and conflicting opinions so nearly balanced, that the reader is quite at a loss to determine in what direction the truth is likely to be found.

The work of Dr. Alison is of a character entirely different from the preceding. We have here no poising of contradictory statements to distract the reader; but it consists essentially of announcements of the general principles which may be deduced from the best-established facts in this department of medical science, followed by brief statements of the most important data upon which these generalizations rest. We have on several occasions strongly expressed the high admiration we entertain of the labours of this philosophic physiologist, in whom extensive information and sound and vigorous judgment are harmoniously intermingled. However admirably fitted the "Outlines" of Dr. Alison are for his own students, for whom they were intended as a text-book, who enjoy the advantage of hearing fully detailed the different facts by which the generalizations at which he has arrived are confirmed and illustrated; or however useful they may be to those deeply read in physiology, to whom the various facts of the science are already known, they are too meager in their detail of facts to render them sufficiently acceptable to the generality of other readers.—Magendie appears to be so engrossed with his own individual exertions that he has neglected to avail himself of those of his contemporaries, so that though some parts of his work reflect high honour upon him as a successful labourer in experimental physiology, yet his "Compendium," when viewed as a whole, is meager and imperfect. The "Elements of Physiology" of Müller is a work of the very highest merit, and Dr. Baly has conferred a great benefit upon his professional countrymen by rendering its contents more generally known through his excellent translation. Müller has fully proved that he is not only intimately acquainted with the labours of others, but that his numerous successful exertions as an original investigator, justly place him in the foremost rank of distinguished living physiologists. Though every one who makes physiology an object of special study, must feel a delight in perusing and reperusing the pages of Müller, yet we know that the minuteness of many of their details,—take those of the organ of voice as an example,—are apt to damp the rising enthusiasm of the young student, and are totally unsuited for those who, chiefly bent upon practical information, wish to obtain a knowledge of the most important facts and principles in physiology without being obliged to wade through long and minute details, many of which *at present* do not admit of any practical application.—As one part only of the translation of Wagner's work has already appeared, we are unwilling to speak decidedly regarding it; but we may be allowed to state that, though we entertain the highest opinion of its merits, and give all honour to its author for the many new and important facts which it contains, yet we are satisfied that from the length and minuteness of its details upon points which are of greater scientific than of practical value, it will be more highly prized by the professed physiologist, than by those whose predilections, or want of time, prevent them from making this particular branch of medicine an object of special

study. Besides, we believe that the arrangement of the contents of this work is not the best adapted for facilitating the progress of the student of physiology, though perhaps as unexceptionable as any other in a philosophical point of view.

From what we have said it must be evident to our readers that we are fully of opinion that another work on Physiology might be produced, capable of being extremely useful,—a work containing the philosophic cast of the Outlines of Alison, with an amount of the detail of facts sufficient at the same time to enforce and illustrate the generalizations, and to relieve the mind from the exertion of contemplating a rapid succession of abstract truths,—a work in which the reader may find himself under the direction of an intelligent guide, who has well weighed and decided upon the value of the conflicting testimony of those who have preceded him, without being involved in the mazes of minute and lengthy details, nor marched and countermarched over the field of controversy, until at last he becomes perplexed and bewildered. It must not for a moment be supposed that in making these remarks, we wish to encourage anything like dogmatism and overweening self-conceit in authors or that we condemn the exhibition of doubt and diffidence, where there is no distinct road, and where the light is obscure; for against these we have at all times strongly and willingly raised our testimony. We are sufficiently convinced that though many most important facts and principles have been already fully ascertained in Human Physiology, yet much uncertainty and confusion still exist on several very essential points, and that much labour and investigation are still necessary before it attains the correctness and precision of most of the physical sciences; and when we proceed to the elucidation of general principles, or to the details of individual functions, we have too frequent occasion to perceive the justice of the remark that "he who pretends to explain everything in Physiology, is either ignorant of his subject or of himself;" our meaning is that the author should, under the circumstances we have specified, write his work as much as possible in the form of a sustained narrative, without neglecting to express himself diffidently and cautiously when the subject requires it, and also taking care to inform his readers regarding the general character of the most plausible of the doctrines opposed to those which have been adopted by him after much thought and reflection. Neither let it be supposed that we adopt utilitarian views of science, and have any wish to depreciate the labours of those who minutely and accurately record facts, though at the time they may appear destitute of any practical bearing. We are perfectly aware that in the process of time, these for the most part, like isolated and detached recruits, will be ultimately incorporated each under an appropriate banner, and add strength to the onward progress of science; but we are satisfied that no one after a little reflection would maintain that they could be judiciously introduced into a work such as we are endeavouring to describe.

After a very careful examination of the contents of the volume before us, we were delighted to find that all the indications we have thrown out in the above remarks, are in its pages amply fulfilled, and that our author has provided us with a work admirably calculated not only to guide and direct the student of physiology, but from the agreeable mode in which old facts are presented, and new views opened up, also to afford pleasure

and instruction to the deeply-learned in this branch of medical science. The author constantly endeavours to arrive at general principles; for he appears fully sensible that the science of physiology does not only consist in a systematic arrangement of the phenomena manifested by organized bodies, but also in classifying and comparing these "in such a manner as to deduce from them the general laws or principles by which they are regulated." Before any one, however, can successfully enter upon such an attempt, he must not only possess a vast store of facts and institute a careful comparison between them, but, above all, he must be deeply imbued with that cautious spirit of induction which enables him to decide when these facts are sufficiently numerous and authenticated to uphold the generalizations based upon them. We need not inform those of our readers who have perused our author's "Principles of General and Comparative Physiology," that his varied and extensive knowledge of facts, and his mental qualities admirably fit him for the task he has undertaken. We willingly record our hearty approval of the highly successful manner in which the following promise contained in the preface has been fulfilled:

"On every topic it has been the author's aim to present the latest and most satisfactory information within his reach; and he believes that the volume contains much that will be new to the physiologist whose reading has not been tolerably extensive. Its materials have been but little derived from other systematic treatises on the subject; and it will not be found to bear, as a whole, any considerable resemblance to those already before the public. The author has rather endeavoured to bring together the valuable facts and principles scattered through the best of the numerous monographs that have been recently published on special divisions of physiology and medicine; and to reduce these *disjecta membra* to that systematic form, which they can only be rightly made to assume when brought into relation with each other, and shown to be subservient to principles of still higher generality." (p. 9.)

In collecting his facts, our author seems to have paid particular attention to the sources from which they have been derived, and to the value to be attached to each of them. This we have no hesitation in saying is one of the most important qualifications in a historian of science; and we cannot express the annoyance and regret we have sometimes experienced in finding in the works of some learned authors, authorities opposed and ranged against each other, which ought never to be put on the same level—an elaborate and carefully-conducted series of experiments, counterpoised by a few ill-observed and imperfect facts—the cautious induction of one who has made the subject an object of special study, neutralized by the unsupported assertion of another who has only cursorily glanced at it. He who collects together the opinions of authors ancient and modern, without at the same time searchingly scrutinizing the data upon which they formed their conclusions, and fixing their relative value, instead of being considered a benefactor to science, ought to be regarded not merely as a trifler, but almost as a nuisance, who stirs up the sediment of obsolete errors which was quietly subsiding, and renders everything as turbid as ever.

We have also had frequent occasions to lament the slavish deference shown by some authors to the opinions of those of great authority under circumstances where these illustrious persons themselves would have been the first to condemn. The opinions of such men as Hunter, Haller, &c.

are generally invaluable, and always deserving of the utmost consideration on those subjects which they have personally investigated; but it is undoubtedly absurd to place their opinions on other subjects, which they had not made an object of special study, and whose data they had not subjected to rigorous examination, against those drawn from a series of well-observed facts by other individuals, who, it may be, are far inferior in talent and reputation to those who have supported or advanced the opposite opinions. The authors of such works as we are now considering ought to endeavour not only to acquaint themselves with the name of the individual upon whose authority a fact or deduction rests, but also with the *means of knowledge*, which in that particular case he possessed. Were the whole science of medicine judiciously reexamined in this way, one of the greatest boons would be conferred on the medical profession; and there would then undoubtedly be infinitely less room for those numerous conflicting opinions which at present there is so much reason to deplore. Many of the doctrines which now perplex and divide medical men would be swept into everlasting oblivion. Such a task would, however, require the united labours of many dispassionate, industrious, and judicious individuals, and is not likely to be soon, if ever, accomplished.

In his introduction, the author, after pointing out very briefly the necessity "of bringing together all the phenomena of the same kind, in whatever class they may be present before we erect any general principles in physiology," goes on to state that "the objects of the present work is not to follow out such an investigation, but to show the detailed application of the principles of which physiological science may be said to consist, to the phenomena exhibited by the human being, during what may be called his normal life." Though he, therefore, restricts himself principally to human physiology, and with the view of rendering this knowledge more available in the practice of our profession, yet he justly never scruples to have recourse to comparative and even vegetable physiology when he wishes to illustrate and inculcate some great physiological principle, or to simplify and facilitate our knowledge of some particular facts. As Gerber remarks, "if we be made but a little lower than the angels, we are also very certainly made but a little higher than the more perfect among the animals; and in studying the structure and functions of these especially, we find the most important aids to a right understanding of the mechanism by which we ourselves 'live and move and have our being,' and thence, under the guidance of reason and experience, of the means by which we may hope to ward off or to remedy the ills in the shape of infirmity and disease to which we are made obnoxious."

The greater part of Dr. Carpenter's introduction is occupied with some judicious and clear remarks upon the connexion of physiology with other branches of medicine, and it is satisfactorily explained how every new important physiological discovery must put additional means in our power for detecting and curing some of those frequent deviations of the functions of the body from the healthy standard constituting disease. The necessity of a knowledge both of the principles and chief phenomena of physiology to him who devotes himself to the elucidation of the science of pathology is well illustrated by several examples. The following quotation will show, however, that the author does not lose sight of the cau-

tious manner in which general principles require to be applied in the practice of so difficult an art as that of medicine:

"In the mean time the practitioner must be content to follow a middle course. His aim must be to avoid, on the one hand, confiding too exclusively in general principles, however stable and comprehensive he may imagine them to be, until he is satisfied that he knows not only the principle itself, but the subordinate laws which regulate or modify its application to individual cases. Long after the highest laws of motion had been established by Newton, no astronomer could, on the faith of them, have predicted the situation of a planet with more than approximation to certainty; the law of attraction had to be applied in numberless modes not contemplated by its discoverer, before perfect accuracy could be attained. There is great danger, then, in the present state of the science of pathology, in trusting to principles which we may consider unassailable, as our sole guides in the practice of our art; and hence it is not always the *scientific* practitioner, as he is emphatically termed, who is the most successful in his treatment. On the other hand, to apply a particular mode of treatment to a particular set of symptoms, without enquiring into the cause of those symptoms, merely on account of its having been successful in some case that *appeared* analogous, is a mode of practice completely empirical. Yet such a plan is constantly being pursued. But as soon as we begin to enquire into the cause of the morbid action, and seek to remove or counteract this by the application of remedial means which experience has shown to be effectual for such an object, we are really acting to a certain extent on scientific principles. The recorded experience of ages, in its condensed form, must of necessity assume the appearance of general rules of practice; and it is in the application of these rules to individual cases, and in the distinction of those phenomena whose causes are subservient to them, from those which are beyond their pale and which require a mode of treatment altogether different, that the sagacity of the practitioner most displays itself. The *rational empiricism* which prevails in this country at the present day, is a mode of practice that may be regarded as best combining the advantages of scientific knowledge and of recorded experience. The value of *facts* as the only sure basis of general principles is duly appreciated; and yet there is no indisposition to make trial of such *principles* when announced, and to abide by them so far as they appear practically available. This is the only method in which the young practitioner can hope to succeed. The increased attention at present paid to diagnosis, will frequently enable him to determine the real nature of the malady, with much more precision than can be done by a man of age and experience, who has not kept pace with the progress of medical science; whilst the latter will have decidedly the advantage in the application of therapeutic means, especially in those obscure cases which require the tact that can only be acquired by long and attentive observation." (pp. 8-9.)

At the end of the introduction we find a few but very valuable remarks upon the *numerical method*, which cannot be too strongly impressed upon those who are busily engaged in collecting statistical information for regulating practical medicine. We contemplate great ultimate advantages from statistical information, and there are many important facts which can only be elucidated through its means, but as it is apparently the fate of every important doctrine to suffer from the indiscretion of some of its friends, so we find that from the misapplication of the facts thus acquired, "they have a tendency to lead to the substitution of empirical rules for scientific principles; and if too exclusively followed, will tend to the retardation of pathology. If the practitioner is led to reason thus on every particular instance, 'in nine tenths of the cases exhibiting these symptoms, such and such a treatment is successful; therefore I will adopt this treatment in the present one,' he is acting on a most grossly

empirical system." It is obvious that it is necessary for him, before he can escape from this charge that he advance onwards, and endeavour to ascertain the individual circumstances which prevent it from being successful in *all* the cases.

The first chapter, extending to forty-two pages, constitutes a new feature in a work on human physiology; it is occupied in pointing out the place of man in the scale of being. With a view of ascertaining this more definitely, our author takes a short but clear and comprehensive survey of the distinction between plants and animals, and between the different classes of animals. This we regard as a highly proper introduction to the study of the physiology of man, as we are fully satisfied that he who confines his attention to the vital phenomena of man and the higher animals must necessarily always possess very limited and imperfect notions on many most important doctrines in physiology. In this chapter the author brings prominently before us the important physiological fact that the manifestations of activity in plants are confined to nutrition and reproduction, while to these, animals also add sensation and voluntary motion. The possession of sensation and voluntary motion necessitates the presence of particular organs superadded to those of nutrition, which are more or less complex according to the position of the animal in the scale, its habits, and the media in which it lives. As these superadded organs, which place the individual in relation with the external world, are only to be found in animals, it was upon this circumstance that Bichat based his famous classification of the functions of the human body into animal and organic, or into those which are peculiar to animals, and into those which are common to all organized bodies. In the lower organized vegetables and animals, there are no special organs for absorption, digestion, circulation, respiration, and secretion; but every part of the simple structures of these organized bodies can perform all these functions in the feeble manner adequate to the maintenance of their vitality. As we rise in the scale both of the vegetable and animal kingdoms, we find that these functions are more or less concentrated upon particular parts of the organism, and we have distinct organs for absorption, circulation, respiration, &c. The concentration of an organ must be carefully distinguished from simplicity of structure, for the lowest zoophyte has an infinitely less complex structure than man and the other vertebrata, though the organs in the latter undoubtedly present a very striking contrast to the simple zoophyte in regard to concentration. In the soft pulpy homogeneous cellular structure of the zoophyte, we have no separate nutritive and reproductive organs, but each individual part has the property of performing all the nutritive and reproductive functions, or, in other words, these functions are diffused over the whole substance of the animal. In the vertebrata, on the other hand, each of these functions, or rather each of the great divisions of these functions, is concentrated, and is performed by a separate and distinct organ, and by it only. As the manifestations of activity in the vertebrata are eminently more varied and vigorous, it becomes necessary that the duties performed by these organs be increased in a corresponding degree, necessitating a more complex apparatus; but however complicated any organ may become, the function is evidently not the less concentrated or specialized. Thus, the concentration of organs in the higher animals, conjoined with

the linking of them together by the nervous system, for the purpose of harmonizing their actions, and of subjecting certain of them to the influence of sensation and volition, explains in a very satisfactory and philosophic manner how the different parts of the lower animals and the vegetables have as it were individual existence, how the various portions of the organism in the higher animals are mutually dependent upon each other, and how the mutilation of one organ in the human body should so seriously affect all the remaining organs. A general statement of this kind, without an accurate conception of the important points of difference between the lower organized vegetables and animals on the one hand, and the higher organized animals on the other, to which we have just alluded, fails to convey the same clear conviction of its truth, and stands more in the relation of an isolated fact, which can never carry with it the same definite information, nor excite the same interest, as when the causes upon which the fact itself rests are at the same time present in the mind. When, for example, a slip of a plant or a portion of a polype are cut off, these, though small parts of particular organisms, are yet enabled, as we can easily conceive, to maintain an independent existence, for, from the diffusion of organs, each of these parts possesses the properties of reproduction and of nutrition, including both assimilation and respiration; while, when we proceed to the higher animals, a moment's reflection will convince us that it is impossible to select any particular part which is capable of performing these nutritive functions, without which it is obvious no organic structure can exist.

The author explains at some length the chief characteristic structural differences between man and such animals as the chimpanzee and orang-outan, which most nearly approach him; and in pointing out the admirable mechanism of the superior extremities, more especially of the hands, as organs of prehension, he presents us with some interesting remarks, which we shall partly quote:

"There is in him what we observe in none of the mammalia that approach him in other respects, a complete distinction in the functional character of the anterior and posterior extremities; the former being adapted for prehension alone, and the latter for support alone. Thus each function is performed with a much higher degree of perfection, than it can be where two such opposite purposes have to be united. The arm of the ape has as wide a range of motion as in man, as far as its articulation is concerned; but it is only when the animal is in the erect attitude that its arm can have free play. Thus the structure of the whole frame must conform to that of the hand, and must act with reference to it. But it cannot be said with truth (as some have maintained), that man owes his superiority to his hand alone; for without the directing mind, the hand would be comparatively valueless. His elevated position is due to his mind and its instrument conjointly; for if destitute of either, mankind would be speedily extinguished altogether, or reduced to a very subordinate kind of existence..... Man cannot be regarded as distinguished from other mammalia, however, either by acuteness of sensibility, or by muscular power. His swiftness in running and agility in leaping are inferior to that of other animals of his size—the full-grown orang, for example..... He is surpassed by many in the acuteness of his sensibility to light, sound, &c.; but he stands alone in the power of *comparing* his sensations, and of drawing conclusions from them..... Though his reasoning powers seem to differ rather in degree than in kind from those of the inferior animals, he seems distinguished by one innate tendency, to which we have no reason to suppose that

anything analagous elsewhere exists. The tendency here referred to is that which seems universal in man, to believe in some unseen existence."

In his second chapter, which occupies twenty-three pages, our author very judiciously gives a general and connected view of all the functions of the body. This we consider a most important improvement upon the plan generally followed in physiological works, and must serve as a most suitable preparation for enabling the student to enter with advantage upon the examination of the details of individual functions. The functions of the human body are so interwoven together, and exert upon each other such reciprocal influence, that there is no one function in the body which is not dependent, to a greater or less extent, upon some others, and which does not, in its turn, react upon those by which it is itself influenced. There is no prime mover in the human body, as in a physical machine, from which we can set out and explain all the movements which follow. While some of the functions of an organ have a reference to itself only, there are others which are intimately connected with the manifestations of activity in other organs which at first sight appear the most removed and independent. Before the function of respiration can be effected in the human species and in the higher animals, it is necessary that the blood be driven to the lungs by the muscular contractions of the heart, and that air be drawn into the interior of the lungs by the contractions of certain muscles which dilate the thorax; but neither the excito-motory functions of the nervous system, through which the muscles of inspiration are called into action, nor the muscular contractions themselves can go on without the constant exposure of the blood to the atmospheric air. The movements of the heart, and the contractions of the other muscles of the body, are again intimately dependent upon fresh supplies of properly arterialized and elaborated blood, and these conditions can only be fulfilled by the reception of constant supplies of fresh materials from without. The first part of the process of deglutition in the adult is again performed through the intervention of volition and sensation; and before the food conveyed into the stomach can pass through the preparatory stage of assimilation which it there undergoes, certain fluids must first be eliminated from the blood by the manifestation of the function of secretion. It is obvious, therefore, that in the state of life, the organs cannot be considered as simply approximated, nor can they be described separately as in anatomical demonstration, but their actions are often blended together in effecting a common purpose. It is this mutual dependence of the functions, and the reciprocal assistance which they give and receive from each other, which demands that there should be a proper harmony between the organization of the structures which are thus mutually influenced, without which their vital activity could not be maintained; for if a single one of the functions was modified in a manner incompatible with the condition of the others, it is apparent that the animal could never live. A preparatory knowledge of this kind enables the student, when examining individual functions, to perceive the bearing of facts upon each other, and to recognize the importance of particular details, which would otherwise pass unnoticed.

In this general view of the functions of the body, our author has with his usual judgment taken, as the basis of his observations, the two great natural divisions into which the function of man, and all animals raised

above the lowest in the scale, may be readily arranged, to which we have already had occasion to allude, viz. unto those by which the organism is built up and maintained, and the continuation of the species provided for; and into those which place the organism in relation with the objects of the external world, and enable it to avoid what is hurtful and approach what is salutary. The possession by animals of an internal and complicated canal, surrounded by muscular fibres, the presence of a powerful muscular propelling organ in the circulatory apparatus, and the extensive muscular movements induced through the nervous system, by which air is drawn into the interior of the respiratory apparatus, and again expelled, do not, as our author judiciously points out, constitute any fundamental difference between the nutritive functions of animals and plants. The first is necessitated to place that portion of the nutritive in relation with the locomotive functions of the animal, and to furnish that more abundant supply of elaborated nutritious juices always conjoined with the more active manifestation of the vital actions, and the two latter to secure still farther the more rapid elaboration and purification of the nutritious juices, and an abundant and certain circulation of these through the different tissues. The muscular movements of the heart and intestinal canal habitually go on without our consciousness and volition; those of respiration may also proceed without the intervention of sensation and volition, so that they are essentially organic functions.

"Thus we see that, when we enter, as it were, into the *penetralia* of the animal system, and study those processes of which the *life* of the material fabric consists, we find them performed under conditions essentially the same as those which obtain in plants; and we observe that the operations of the nervous system have none but an indirect influence or control over them. It is therefore quite philosophical to distinguish these *organic functions* or phenomena of vegetative life, from those concerned in the life of relation or animal life. The distinction is indeed of great practical importance, and lies at the foundation of all physiological science, yet is seldom accurately made, and a very confused notion on the subject is generally prevalent. It is commonly said, for example, that the function of respiration is the connecting link between the two: the fact being, however, that the true process of respiration is no more a function of animal life than is any ordinary process of secretion; but that, in order to secure that constant interchange of air which is necessary to its performance the assistance of the nervous and muscular systems is called in, though not in a manner which necessarily involves either *consciousness* or *will*." (p. 72.)

The distinction between these two sets of functions is still farther illustrated by the case "of no unfrequent occurrence, of a human being, deprived by some morbid condition of the brain, of all the powers of animal life—sensation, thought, volition, &c.; and yet capable of maintaining a vegetative existence—all the organic functions going on as usual, the morbid condition not having affected that division of the nervous system which is concerned in the movements on which some of them depend." (p. 62.) Though we can assign no definite limits to such a state, as long as the necessary food is placed within reach of the grasp of the muscles of the back part of the mouth, yet, as our author remarks, "it is seldom of long continuance; since the disordered state of the brain is sure to extend itself, sooner or later, to the rest of the nervous system." If the nutritive are, to a certain extent, dependent upon

the animal functions, "the animal are even more closely dependent upon the nutritive actions; for many tissues will retain their several properties for a much longer period after a general interruption of the circulation, than will the nervous structure." (p. 62.) The function of reproduction in the animal and vegetable kingdoms is essentially the same in kind, and is only linked with the animal functions, even in the higher vertebrata, in the preliminary steps of the process, and to fulfil one of the conditions necessary in the propagation of all organized bodies where there is a division into sexes.

In his third chapter the author enters upon the consideration of the individual functions in detail, and very judiciously commences with the nervous system. He first gives a general summary of the functions of the nervous system, and, in doing so, presents us with the following sound and excellent remarks:

"It is well to explain that, though the physiologist speaks of the intellectual powers, moral feeling, &c. as *functions* of the nervous system, they are not so in the sense in which the term is employed in regard to other operations of the bodily frame. In general, by the *function* of an organ we understand some change which may be made evident to the senses, as well in our own system as in the body of another. Sensation, thought, emotion, and volition, however, are changes imperceptible to our senses by any means of observation we at present possess. We are cognisant of them in ourselves without the intervention of those processes by which we observe material changes external to our minds; but we judge of them in others only by inferences founded on the actions to which they give rise when compared with our own. When we speak of sensation, thought, emotion, or volition, therefore, as functions of the nervous system, we mean only that this system furnishes the conditions under which they take place in the living body." (p. 86.)

Many physiologists have attributed other functions to the nervous system besides those which our author enumerates,—such as the property of contractility, by which a muscle contracts upon the application of an excitant; and, to the presence of the nervous system, many also refer the property or susceptibility of the different tissues by which fresh materials are selected from the nutritious fluids in the performance of the function of nutrition. In the same manner many affirm that the different properties or susceptibilities of the various organs for secretion, by which they are enabled to eliminate such dissimilar compounds, as the bile, saliva, tears, gastric juice, &c., from the same fluid, the blood, depend upon the agency of the nervous system. Numerous facts are, however, adduced by Dr. Carpenter in different parts of his work, to prove that the nervous system is not necessarily connected with any of these functions, though each and all of these may be, and, in fact, in the natural and habitual condition of the body, really are, influenced in a most important manner through this system. Many of those who maintain that muscular contractility, that nutrition and secretion depend upon the nervous system, do not appear to appreciate fully the difference between the circumstances of a substance furnishing the conditions absolutely necessary for the performance of any action, and that when this action is only modified by the presence of this substance. To make use of an illustration which has already been used to inculcate this difference: we know that the movements of a horse are independent of the rider on his back, in other words, the rider does not furnish the condition neces-

sary for the movement of the horse, as muscular movements, but every one is aware how much their movements may be influenced by the hand and heel of the rider. In the same manner we believe that muscular contractility, nutrition, and secretion are independent of the nervous system; yet we know that these may severally be increased, diminished, or even arrested by causes acting through the nervous system. Though we remove the property of muscular contractility, and the functions of nutrition, secretion, and absorption, from the list of those intimately and necessarily dependent upon the nervous system, we still leave many of the most important functions of an animal body under its entire control. In fact, the functions connected with this system are exactly those which distinguish the unconscious and passive vegetable from the active and reflecting mammal. The plant, though devoid of nerves, can assimilate the materials of the external world to its own structures, as man can do; it can eliminate various secretions from its nutritious juices as well as man. Several species of plants also exhibit undoubted evidence of contractility, as is well illustrated in the sensitive plant. It is only, however, in those animals raised above the lowest in the scale, and in whom the nervous system is somewhat developed, that the individual is enabled to become an active agent, to detect and avoid what is hurtful, and to search after and approach what is salutary. It is by the agency of the nervous system that all these combined actions are effected in the higher animals, by which the air is drawn into the lungs, and again expelled, as in the function of respiration, by which we are enabled to swallow, to articulate words, and to perform those numerous and varied manual operations, by which the sculptor and the painter are enabled to embody the finest and the noblest conceptions of the human mind upon the marble or the canvass, and to model and form all the numerous instruments and machines absolutely essential, not only for our humblest necessities, but without the aid of which there could be no science, and no arts. With the presence and integrity of the nervous system are also combined those manifestations of the intellectual faculties by which the various objects effected through the agency of the intellectual faculties, are conceived and planned. With the presence and integrity of the nervous system are also conjoined all those manifestations of the mental emotions and passions which agitate, afflict, and delight the human race.

After giving an excellent digest of the best-ascertained facts regarding the elementary structure of the nervous system, the author next presents us with a general view of the elementary functions of the nervous texture. The notion that the gray matter, from its great vascularity, and from its uniform presence in all those portions of the nervous system which manifest its peculiar functions, serves as the *source* of power; and that the white or medullary portions merely act as *conductors*, conveying changes from one part to another, has been, and we think justly, gaining ground of late, and this is the view adopted by our author. In the chapter on the functions of the cerebrum (p. 215) other arguments, drawn from pathological observations, are adduced in favour of this view. He adduces good grounds for believing that the *peripheral* as well as the *central* extremities of the *afferent nerves*, or those which convey inwards impressions to the central organs of the nervous system, are in close relation with a vascular plexus, and having a granular structure (as in

the central substance of the brain,) intermediate between them. This is certainly the case in the peripheral expansion of the auditory and olfactory nerves, and in the papillæ of the skin and tongue.

"Our simplest idea of a nervous system includes a central organ, of which the gray matter formed by the intermixture of nervous fibres and blood-vessels, is the essential part; and an *afferent* and *efferent* set of fibres connected with it; one conveying to it the impressions produced by external changes upon the periphery (where also the nervous structure comes into peculiar relation with the vascular system), and the other conducting from it the motor stimulus originating in itself, to the contractile tissues."

The complex nervous system of man himself, when fairly scrutinized and analysed, is found to be essentially the same as this in kind, both anatomically and functionally.

Dr. Carpenter has, with great judgment, devoted a section to the consideration of the "mode of determining the functions of nerves," (p. 87;) a kind of knowledge, which we have looked upon as a great desideratum in books of this description. Every one who does not possess distinct and accurate information on the proper methods of ascertaining the different functions of the nerves must be constantly liable to fall into error in attempting to explain many phenomena which occur both in the healthy and diseased conditions of the system. Such a knowledge enables its possessor not only to scrutinize with confidence the inferences drawn from observations made on the functions of the nervous system either by himself or others, but suggests to him numerous sources of fallacy which would otherwise have escaped his notice. In a subsequent part of the work (p. 200) the author also points out the relative value of the results of negative and positive experiments in investigations into the functions of the nervous system—a distinction which is frequently overlooked, and cannot be too strongly impressed upon the mind. If a particular function be deranged, or even entirely disappear after the injury or destruction of a certain organ of the body, we cannot be quite certain that the performance of this function was connected with that organ, for the effects of the injury may have extended themselves to other organs, and not have been confined to that experimented upon. On the other hand, when we find a particular function, the performance of which is attributed to a certain organ remaining perfect after the complete destruction of that organ, then we have the most conclusive evidence that the performance of that function is not necessarily connected with the existence of that organ, for a thing cannot act where it is not. If, for example, we find the voluntary movements either imperfectly performed or arrested after destruction or the removal of the cerebellum, we are not certainly entitled to conclude that the function of volition is dependent upon the cerebellum, for the effects of incisions, hemorrhage, &c. necessarily attendant upon all such experiments, may affect the functions of other parts of the encephalon. Suppose, however, on the other hand, that the voluntary movements continue perfect after removal or complete destruction of the cerebellum, then we have the most conclusive of all evidence for affirming, that the functions of volition are not necessarily dependent upon the agency of the cerebellum, for it would be absurd to suppose that a function can be performed when the organ through which it is manifested is no longer in existence. It must

also be sufficiently obvious that the deep incisions, hemorrhages, and infliction of pain, — the favorite topics of those who rail against *all* inferences drawn from experimental physiology,—cannot be urged against the results of the last experiment; on the contrary, these would all operate in favour of its accuracy; for if the function continued not only after the organ supposed to perform it had been removed, but also after various other injuries had been induced, it would afford, if this were possible, still stronger confirmation of the independence of that function of the presence of that particular organ. The former case, which we have here supposed, is termed a *negative* experiment, and must always be received with the utmost caution; the latter is a *positive* experiment, and is deserving of implicit confidence. One positive experiment will, when accurately performed, outweigh a whole host of negative experiments; yet how frequently do we find individuals ignorant of their relative value, cavilling at the inferences drawn from a positive experiment, and dogmatizing upon the results of a few negative experiments. When a negative experiment has been repeated several times, under varied circumstances, and invariably with the same results, and when we are also enabled, by positive experiment, to analyse the functions of the organ to a certain extent, and to ascertain what particular functions are not performed by it, sufficiently accurate data may be obtained to enable us to draw our conclusions with perfect accuracy. For example, it being previously ascertained that sensation and the voluntary movements depend upon the nervous system, if we then proceed to cut the portio dura nerve, and find that the sensation of the face remains quite perfect, though motion be lost, we are entitled to conclude, from this experiment, that the sensations of the face are not dependent upon this nerve, but we cannot be equally certain that the loss of voluntary motion over the muscles of expression of the face was essentially dependent upon the division of the nerve, since some other accidental circumstance may have induced this. If, after several repetitions of this experiment, this loss of voluntary motion be *invariably* produced, we may be pretty confident that these movements are connected with the integrity of this nerve, and this amounts to perfect conviction by experiments on the fifth pair, the only other nerve of the face distributed in these muscles, in which the very opposite results follow, viz. loss of common sensation and persistence of the voluntary movements.

We conceive that it is as much the duty of him who undertakes the guidance of those entering upon the study of physiology to endeavour to train them "to the high task of correctly interrogating and interpreting nature," as it is to furnish them with the facts and principles of the science. Our author, in directing the attention of his readers to those portions of the comparative anatomy and physiology of the nervous system, which assist us in unravelling the complicated functions of man, very justly remarks that "although the structure and distribution of the nervous system in the different classes of animals have been, until recently, but little appealed to in the determination of its functions, they are capable of supplying evidence regarding some of these not less important in its character than that which comparative anatomy affords to other departments of physiology." (p. 91.) As we had on a former occasion (vol. VIII. p. 506,) an opportunity of directing the attention of

our readers to the results of the investigations of our author in this interesting and important department of physiology, contained in his "Prize Thesis," we shall simply content ourselves with an expression of our conviction of the great value of this part of the work to those entering upon the study of the more complex nervous system of man.

In his account of "the anatomy and functions of the nervous system," Dr. Carpenter has implicitly adopted both the doctrine of Sir Charles Bell, on the difference between the volitional and sensiferous and nervous filaments, and the excito-motory doctrine of Dr. Marshall Hall. The doctrine of Sir Charles has now fairly and successfully passed through the severe ordeal to which every important discovery is generally and justly subjected; that of Dr. M. Hall appears to be rapidly immerging from it. It is in the vertebrated animals that the difference between the sensiferous and volitional nerves has been satisfactorily determined, while "on the other hand, the distinctness of the system of nerves concerned in the simply-reflex actions, from those which minister to sensation and volition by their connexion with the brain, is by no means so obvious as in the invertebrated classes." (p. 118.)

An excellent general description of the "arrangement of the nervous system of man" appropriately follows that of the other animals beneath him in the scale, and mutual light is thrown upon them by contrast and comparison. The following passage will show the manner in which this is managed:

"There is no reason to believe that the functions of the spinal cord are essentially different along its whole length. Everywhere it appears to consist of a ganglionic centre, supplying nerves to its particular segment, and of connecting fibres, by which the nerves proceeding from any one division are brought into relation with distant portions of the organ, and with the large ganglionic masses at its anterior extremity. In this respect, then, it corresponds precisely with the double nervous cord of the articulata; the only prominent difference between the two being, that in the former the ganglionic matter is continuous from one extremity of the organ to the other, whilst in the latter it is interrupted at intervals; and in the mollusca the centres are still further separated from each other. The connexion of the spinal cord with the large ganglia contained within the cavity of the cranium is effected by means of processes from its superior extremity, the arrangement of which is somewhat complex. This portion of the cord, which also lies within the cavity of the cranium, has been termed the medulla oblongata. It has been supposed to be the peculiar seat of vitality; but the only real foundation of this idea is, that it is the great centre of respiratory actions, on the continuance of which all the other functions are dependent. The brain may be removed from above, and nearly the whole spinal cord from below, without an immediate check being put upon all the nervous phenomena of life." (p. 123.)

A general description of the "anatomy of the medulla oblongata" follows this.

Under the "functions of the spinal cord," the author describes, and at considerable length, all the excito-motory muscular movements, as those of respiration, deglutition, those which control the orifices of the various open cavities of the body, &c., and has availed himself of the results of all the late investigations into the functions of individual nerves, in explaining the particular afferent and efferent nerves engaged in the performance of these muscular movements. The various changes which take place between the blood and the atmospheric air, or the function

of respiration, properly so called, are examined separately, and after the account of the circulation of the blood.

Dr. Carpenter has, in our opinion, very properly refused to class the peristaltic contractions of the intestines among the excito-motory movements, maintaining "that the intestinal tube from the stomach to the rectum *is not dependent* upon the spinal cord for its contractility, but is enabled to propel its contents by its own inherent powers." While, however, he contends that the muscular fibres of the intestines are excited to contraction by direct stimulation, he points out that "the nervous centres exert a general control over even the organic functions." (p. 151.) Before leaving the account of the principal functions of the spinal cord, he adverts to some of the leading pathological applications of the physiological doctrines which can be deduced from it, and illustrates the greatly increased precision which our knowledge of many convulsive and spasmodic diseases has acquired from the researches of Dr. Marshall Hall. (p. 159.) This important subject is again introduced at greater length at p. 227.

The author now proceeds to examine the "functions of the *encephalon*;" and, after taking a general view of the comparative anatomy of that portion of the central organs of the nervous system, he examines in detail the functions of the encephalic nerves. In this, as in every other part of the work, Dr. Carpenter exhibits his great knowledge of facts, and, what is of more importance, of their proper relation to each other. He has given an excellent account of the functions of the motor nerves of the orbit, and of the consensual movements of the muscles of the eyeball,—subjects which of late have attracted a good deal of attention in connexion with the operations for strabismus. After some very interesting remarks upon the "relation between *instinct* and *intelligence*," we find, at p. 198, a very ingenious attempt to localize the seat of those instinctive actions which are prompted by sensation: this we beg to lay before our readers.

"If the essential correspondence between the purely emotional acts of man, and the instinctive acts of the lower animals be admitted, we may reasonably localize the centre more satisfactorily in that chain of ganglionic masses which only occupies the centre of the base of the brain in man, but which in the lower vertebrata possesses an aggregate dimension far exceeding that of the cerebral hemispheres. We are led to such a localization by a very simple and satisfactory chain of reasoning. The actions in question are not simply reflex; since sensation and something of the nature of emotion, both involving consciousness, are elements in their performance; and, moreover, these sensations are rather of the *special* than of the *common* character, involving, therefore, the olfactory, optic, and auditory ganglia. No intelligent person can doubt that, as we descend the scale of being, instinct is gradually superseding reason; and that in the lowest vertebrata (we go no further, because no comparison between the parts of the nervous centres could be made with equal certainty between animals of a different type), the manifestations of the latter are extremely feeble, nearly all the actions of life being guided by the former. Now, on looking at the encephalon, we perceive a difference in the relative proportions of its principal divisions so closely corresponding with these, that it is difficult to imagine them unconnected. In proportion as we descend the scale, we find the cerebral hemispheres diminishing in relative size, whilst the ganglia at the origins of the nerves of special sensation increase to a remarkable degree; and we cannot, therefore, but consider it probable that these ganglia and tracts of gray matter, whose size is in man so trifling in comparison to the bulk of his cerebral hemis-

pheres, are subservient to those instinctive actions which are prompted by sensations, but in which volition does not partake."

In examining the "functions of the cerebellum," our author, after remarking that the particular purposes which are served by this organ are still much in the dark, proceeds to detail a number of arguments drawn from comparative anatomy, from the result of experiments, and from pathology, in favour of the view that the faculty of combining the muscles in groups in those actions which are not excito-motory are dependent upon this portion of the encephalon. Though he has adduced a formidable array of facts in favour of this opinion, yet we confess that after a careful examination of all the evidence advanced by its supporters, we feel less inclined to admit this doctrine than he appears to do, and we would willingly break a lance with him on this point, did our time admit of it. As our space is already nearly exhausted, we must hasten onwards, and content ourselves by giving our readers a cursory glance of the contents of some other parts of the work. The remainder of this section of the volume is occupied with a detailed account of the "function of sensation, and the organs of the senses," to some parts of which we would willingly have directed the attention of our readers, had we not, from the great interest of the preceding part of the volume, lingered so long upon it.

After finishing the consideration of the nervous system, the author properly proceeds to the examination of the "intimate structure and functions of the muscular tissue, and the organs of the voice and speech," as they form the remaining parts of the apparatus of animal life. In describing the intimate structure of the muscular fibre, he has availed himself freely of the late researches of Mr. Bowman, as this gentleman's results are those most conformable to his own observations; and several representations of the appearance of the muscular fibre under the microscope are given to enable the reader fully to comprehend the description. In examining the functions of the muscular tissue, we are glad to find that our author maintains, on what we believe to be very sufficient grounds, that the property of muscular contractility is not derived from the nervous system, and has taken care to point out the insufficiency of the arguments of Müller and Dr. Marshall Hall in favour of the opposite doctrine. He is, however, at the same time careful to point out that, though muscular contractility is independent of the nervous system, yet it may be influenced to a most important extent by causes acting through the nervous system, as is well illustrated in the effects of extensive injuries of the brain or spinal cord upon the contractility of the heart, to which the term Concussion is applied. The contractions of the heart, if not altogether arrested, become weak and rapid, and the flow of blood through the capillaries is also enfeebled. We can, therefore, readily explain the weak, small, and rapid pulse, the cold extremities, the sighing respiration, and the cerebral derangement which form the prominent symptoms of concussion. If, on the other hand, the injury be confined to a smaller portion of the brain, the contractility of the heart may be little if at all affected, and the individual may be deprived of consciousness, and lie with dilated pupils, and slow and heaving respiration occurring at long intervals, presenting a condition generally termed *compression*. The contractility of the heart and the capillary circulation

continuing comparatively unaffected, explain the persistence of the full pulse and warm skin, while the dilated pupil and slow heaving respiration depend upon the injury done to the optic lobes and medulla oblongata. We can readily understand how the extent of these latter symptoms should not have any fixed relation to the state of unconsciousness. Our author takes care to point out that the same debilitating effects upon the heart's action and capillary circulation may be induced by extensive burns of the surface of the body, by severe injuries of the extremities, as in compound fractures, by sudden and rapid peritonitis, &c. These are most important practical facts, which cannot be too deeply studied by all those who wish to acquire enlightened views of pathology.

Before proceeding to the consideration of the nutritive functions the author devotes a short chapter to the examination of the "influence of the nervous system on the organic functions," a subject of considerable importance both in a physiological and pathological point of view. The effects of the emotions of hope and joy, and the agreeable sensations, when not excessive and transient, but more moderate and steady, in promoting the capillary circulation, and encouraging the necessary secretions; and, on the other hand, the effects of the depressing passions, such as grief, anguish, and despair, in enfeebling the capillary circulation, diminishing or vitiating the secretions, and enfeebling the contractility of the heart, and thus favouring the influence of those causes which induce disease, and impede the operations of those actions by which the body may rid itself of its maladies,—are all clearly explained and illustrated.

In examining the nutritive functions in detail, our author proceeds in the most methodical manner he could adopt. He traces the course of the food from its first introduction into the alimentary canal, until it becomes intermixed with the juices already elaborated in the blood, and describes the various changes, as far as they are known, which it undergoes in its first process of assimilation in the stomach, and in its subsequent progress along the lacteals and thoracic duct. These details necessarily require him to enter into an account of the function of *absorption*. He is then led to the consideration of the mode in which the blood is circulated; and from this he naturally passes to the examination of the only remaining process engaged in elaborating the ingesta into a nutritious fluid fitted for maintaining the vital actions of the different tissues, viz., the function of respiration. Having thus examined the processes by which the plenitude of the blood-vessels is maintained, and the mode in which the fully-elaborated nutritious fluid, or the arterial blood, is circulated through the various structures of the body, he proceeds to describe, as far as they are known, the different molecular changes by which certain materials are eliminated from the blood, and deposited in the tissues for their nutrition; and also the processes by which other materials are separated from the blood by the organs of secretion. The only remaining process which can properly be included under the nutritive functions is that by which various materials which apparently cannot be converted into compounds fitted for the nutrition of the tissues, are separated from the blood and thrown out of the body, constituting the function of excretion. The author next takes a general review of the nutritive functions, and this is followed by an account of the process by which the animal heat is generated. The development of animal heat has, for a con-

siderable time past, been generally described as part of the respiratory function, but there can be no doubt that this is due to the molecular changes of nutrition and secretion generally, of which those of the lungs form a part, and that our author is perfectly right in placing it where he has. The detailed account of these various processes necessarily occupies a considerable portion of the volume: in reading them, we marked out a number of the passages, most deserving of being quoted and commented on, but our circumscribed limits forbid this. The execution of this part of the work is equal to that which we have already gone over.

In the chapter on "digestion" we find a perspicuous and complete analysis of the experiments of Dr. Beaumont on this subject; also those of Eberle and Schwann on artificial digestion, and those of Wasmann upon *pepsin*, the active principle in the gastric juice. We have also an account of the results of the late interesting chemical analysis of fibrin, albumen, casein, &c., by Mulder and Liebig, which promise to throw much light on the process of *assimilation;* and among these our author has intermingled many ingenious comments, which we regret to be obliged to pass over without further notice. The chapter on digestion is closed with some valuable practical remarks upon the supply of food required by man.

In the chapter on the "circulation of the blood," we would particularly direct the attention of our readers to the observations upon the causes influencing the circulation in the arteries and capillaries, as we are fully convinced that the doctrines maintained by the author on this subject are correct, and that the facts there adduced afford a complete refutation of the notions most generally entertained on this subject,—opinions fraught with many grave errors. "The idea of any *mechanical* assistance, afforded by the action of the capillaries to the movements of the blood," must be got rid of before any steady advances can be made in some departments of pathology, for it directs research in a wrong track.

The chapter on "nutrition" is especially deserving of attention, as great advances have lately been made in our knowledge in this quarter, and our author has collected, from the scattered papers lately published, a connected and systematic view of all that is *at present* known on the subject, which the reader will in vain search for elsewhere. There is one passage here, with the truth of which we are forcibly struck, which we cannot avoid quoting:

"Several instances have been recently published of the occurrence of vegetable organisms as parasites upon the animal body: that in some of these a true plant, possessing a regular apparatus of nutrition and reproduction, has arisen from a germ introduced from without, there can be little question; but in other instances (as in the case of crusts of *porrigo favosa*) it has been assumed that the organization is vegetable, because it consists of a mass of cells capable of extending themselves by the ordinary process of multiplication. But it must be remembered that the vesicular organization is common to animals as well as to plants; being the only form that manifests itself at an early period of development in either kingdom, and remaining throughout life in those parts which have not undergone a metamorphosis for special purposes. Hence to speak of *porrigo favosa*, or any similar disease, as produced by the growth of a vegetable within the animal body, appears to the author a very arbitrary assumption; the simple fact being, in regard to this and many other structures of a low type, that they present the simplest or most general kind of organization." (p. 458.)

The volume is terminated by an account of the "function of reproduction." Our notions on many points of this process have, of late years, undergone a complete revolution, and many talented and industrious investigators are, at the present moment, engaged in unfolding its mysteries. Here, as in every other part of the work, we find our author quite *au courant* with the present state of our knowledge.

In reading over a work such as this, containing a great multiplicity of facts and inferences from them, it is impossible to suppose that we could give our free assent to all the statements which it contains, but we can most conscientiously declare that, after a careful examination of it, we could find nothing where we could with confidence affirm that the author was wrong, and we were right; and the few points on which we differ were of minor importance, and not worthy of being commented upon. When we say that the merits of this volume are equal to that of the author's "Principles of Comparative Anatomy and General Physiology," we are bestowing upon it very high praise. The style is everywhere easy, perspicuous and appropriate to the subject. The numerous woodcuts and engravings with which the descriptions are illustrated, are judiciously selected, and excellently executed. We speak advisedly when we say that we know of no work on physiology from which the student is likely to derive so much advantage: the whole of it reflects the highest honour upon the talents, knowledge, and judgment of the author.

Art. XV.

1. *Compte Rendu des Séances de l'Académie des Sciences*, No. V.—*Août*, 1841. (*Rapport fait à l'Académie des Sciences au nom de la Commission dite de la Gélatine.*)—*Paris*, 1841. 4to, pp. 77.

Report made to the Academy of Sciences in Paris by the Gelatine Commission.—*Paris*, 1841.

2. *Proceedings of the Philosophical Society of Glasgow.* (*Report of the Physiological Committee "On the best means of providing cheap and nourishing food for the Poor."*)—*Glasgow*, 1842. 8vo, pp. 16.

One of the great obstacles to the discrimination of the nutritive properties of different kinds of food appears to have been a distinction which has been insisted on by many between animal and vegetable matter. Yet if we compare vegetable and animal existence at their beginning, a very close analogy between them must force itself upon even a superficial observer. Both kinds of matter spring from seed; they are nourished by the media which surround them, and in all the relations of mere living beings their conditions are almost parallel. The vegetable kingdom, however, consists of species which are not endowed with the powers of locomotion, and hence we find their food is of a more elementary nature —carbonic acid, ammonia, water; while animals employ substances for their nourishment which are the products of the elaboration of these simpler elements. In this point of view, then, the assimilating apparatus of plants might be considered of a somewhat higher order than those of animals, just in proportion to the greater difficulty in the chemical operation of converting azote, carbon, hydrogen, oxygen, sulphur,

and phosphorus into vegetable albumen, than of dissolving that substance in the animal stomach, and depositing it in another part of the body in the solid form of albumen or fibrin, with identically the same chemical composition, and similar or slightly modified physical properties. But further; vegetables are the incipient stage of animal existence, for plants are the only creators of living solids, if we may so speak; they serve to produce, from gases, the solids which, under the term of meat or muscle, we find in cattle in a modified form; so that the human body is purely of vegetable origin. This view has been amply confirmed by chemical analyses, which have demonstrated the identity in composition of the albumen of the pea, the curd of cheese, and the albumen and fibrin of the blood. Henceforth, therefore, it would appear that instead of assuming an animal substance as the type of nutritive food, we must recur to the vegetable kingdom, and form our standard at the source of all organic matter.

These considerations prepare us for appreciating the justice of the views of those who have pointed to the amount of the azote of plants as the indication by which we are to measure the nutritive power of vegetable food. There can be no doubt that an attentive examination of this subject will bear us out in the conclusion that substances derived from the vegetable kingdom are nutritious in proportion to the quantity of azote which they possess. But our present knowledge does not permit us to say that such substances are *alone* endowed with nutritive power. Sugar is perhaps a striking instance in illustration of this exception. The familiar fact of the fattening of the negroes and even dogs during crop-time in the West Indies would appear to negative such a position. Humboldt informs us also that he has frequently observed the mule drivers, who carried his luggage on the coast of Caraccas, giving the preference to unprepared sugar over fresh animal food. In both of these instances, however, it is presumed, unprepared sugar, in other words, the juice of the sugar-cane, which might contain albumen and other matters, was employed; and even these were only used in conjunction with other articles of diet. Potatoes also are universally acknowleged to be far from the bottom of the nutritive scale; and yet the quantity of azote present in this vegetable is exceedingly insignificant compared with the amount which can be detected in even the inferior qualities of wheat. According to Proust, potatoes contain no gluten, nor has any subsequent investigator pointed out accurately the source of the azote which is unequivocally distinguishable in all varieties of this vegetable.

Boussingault, a French chemist, who is well known by his chemical researches in South America, has contributed much to the elucidation of the relative nutritive properties of vegetables. He has examined a variety of the common vegetables employed as human food in connexion with the amount of azote which they contain, and has formed a theoretical table or scale, arranged according to the results of his experiments. He has compared the numbers which he has thus deduced with the practical experience of farmers in feeding cattle, and has detected a most remarkable coincidence between the theoretical and practical inferences. In the following table we have calculated the equivalents, so as to correspond with the vegetables employed in this country. It is read thus: 100 parts of white French beans are equivalent in nutritive power to 120

parts of yellow peas, to 1096 of potatoes, and to 2383 of turnips. A farmer, for example, in feeding cattle, would find that 120 parts of yellow peas would go as far in keeping up the strength and efficacy of his cattle as 2383 parts of turnips; for every one is familiar with the fact that a small portion of oats is sufficient for retaining the strength of a horse unimpaired; while if hay were employed for the same purpose, the amount by weight would require to be much increased:

White French beans	100
Yellow peas	120
Farina of cabbage	148
„ of carrots	170
„ of wheat	175
Wheat	191
French Wheat	193
Rye	200
Farina of barley	212
„ of potatoes	225
Barley	232
Indian corn	246
Potatoes	1096
Carrots	1351
White cabbage	1446
Turnips	2383

By an inspection of the preceding table we learn that those vegetables which contain gluten are the most nutritive bodies; while those substances which contain no appreciable quantity of this vegetable principle are comparatively low in the nutritive scale. Gluten is the substance procured from wheat-flour, by digesting the latter in cold water and pressing it through a cloth. By careful washing, the whole of the starch is separated and nothing remains in the cloth but a tough adhesive mass, insoluble in water. To procure this perfectly free from starch is a difficult problem. However, we have found that if it is well washed under a stream of water, and then digested frequently in water, at the temperature of 120°, it may be procured tolerably pure. It should then be digested in alcohol. The latter takes up an oily matter which has been termed *proper gluten*, and leaves vegetable albumen. The quantity of proper gluten is very small, according to our trials. The great bulk, therefore, of what has hitherto been termed gluten is, in reality, albumen consisting of carbon, hydrogen, oxygen, azote, sulphur, and phosphorus, in nearly the same proportions as the casein or curd of milk, the fibrin of the blood, and the albumen of serum and of eggs.

We beg to draw attention to the fact, which has been noted in the preceding observations, viz. that vegetables are nutritive in proportion to the quantity of gluten which they contain; because it has been shown, (Glasgow Report), that in the usual mode of baking bread by fermentation, a portion of this nutritive matter is destroyed in addition to much material which we have already found to be nutritive. In some chemical works, the quantity of gluten contained in flour is stated as high as 24 per cent.; and 18 per cent. is a common quotation. To put this statement to the test of experiment, we procured half a pound of the best Scotch flour, and treated it in the manner previously described. After separating all the starch, we exposed it to the heat of a vapour-bath until it ceased to lose weight. We found the quantity of gluten to amount to

6 per cent. of the original flour. This is a decided proof of the great inferiority of British flour compared with that of Italy and other continental countries. But it is further abundantly proved, by the impossibility of manufacturing British flour into maccaroni, a characteristic property of Italian flour, and which may be viewed as a test of the excellence or deterioration of flour. Those who have examined British maccaroni will at once admit this position; and persons who have been at the expense of preparing it, will still further be enabled to corroborate the accuracy of this statement. It would be very easy to show, if this were the proper place for such discussions, that the corn of this country never can cope in excellence with that grown in milder climates; and our statesmen might hence derive an argument in favour of the unrestricted importation of flour,—from the south, at least,—which could not well be controverted.

In order to form fermented bread, a certain quantity of flour and water is mixed together. Yeast is added to them, and the process of fermentation is allowed to proceed to a certain extent, when it is suddenly stopped by exposure to the powerful temperature of the baker's oven. Now it is necessary, in order to appreciate the nature of this process, that we should follow the yeast in its action. To two pounds of dough, the baker probably adds two teaspoonfuls of yeast. The yeast is a glutinous body, in a state of decomposition, which possesses the power of generating a similar action in sugar, when it comes in contact with that substance. The sugar is decomposed into alcohol and carbonic acid; while the yeast has increased in quantity, from two teaspoonfuls to probably double that quantity. This is obviously proved in the case of the use of leaven, which is quite analogous in its action to yeast. A minute portion of leaven is capable of communicating a decomposing action to a large mass of dough, and a minute part of the dough thus excited to fermentation will occasion a similar action in another mass of dough. It is clear, therefore, that the original mass of ferment has regenerated itself. Now, Liebig, from whom the chemistry of fermentation has received much elucidation, has shown that yeast or ferment, in order to reproduce itself, must act upon gluten; hence it is obvious that in the fermentation of bread, not only the sugar of the flour is acted on, but also the gluten or albuminous and nutritive principle is decomposed. The yeast, moreover, is apt to communicate an impairing flavour to bread, and in this point of view it has been viewed by several scientific men, who have proposed substitutes. Mr. Henry, of Manchester, recommended water impregnated with carbonic acid; and Dr. Colquhoun tried, with various success, to mix alkaline carbonates with acids in the bread, so as to imitate the action of yeast, without imparting to the bread its disagreeable taste. But we are not aware that any one has taken up the subject in an economical point of view, or in relation to the destructive influence of the yeast upon the nutritive matter.

The preceding considerations induced Dr. R. D. Thomson to turn his attention to the subject, and with the assistance of an intelligent baker in the borough (Mr. Dodson), he has been enabled to arrive at some interesting results. Mr. Dodson, who has introduced a highly palatable and very wholesome bread, which is raised by the action of muriatic acid upon carbonate of soda, at his request made an experiment upon a large scale, and found that by the fermenting process, a sack of flour would produce,

on an average, a hundred loaves, while from the same quantity of flour, by the use of the acid and alkali, the return was 107 loaves; hence there is a loss of 6½ per cent. by the fermenting process: the deficiency depends upon the conversion of part of the sugar of the flour into alcohol and carbonic acid, also upon the destruction of part of the gluten or albuminous principle, by which means new yeast has been formed. (Glasgow Report). In support of this view, the following reasons are adduced:

According to a mean of eight analyses of wheat from different parts of Europe by Vauquelin, it appears that the quantity of sugar contained in flour amounts to 5·61 per cent. But the quantity lost by baking on the fermented plan, exceeds this number by one per cent. nearly. We are, therefore, necessarily compelled to ascribe this additional loss either to the starch or gluten of the flour. It is difficult to conceive any action which could destroy the starch unless it were first converted into sugar and then fermented; but chemistry does not enable us to suggest such a supposition, while the destruction of the gluten is forced upon us in order to enable us to account for the increase in the quantity of yeast. We conceive that the important fact of the loss of so much sugar and gluten in the production of bread deserves much careful attention. One fifteenth of the whole flour of this country used for the purposes of making fermented bread is blown to the winds. In an economical point of view its importance is paramount. This can be readily demonstrated by an application to figures, and the records of the night asylum for the houseless in one of our provincial towns affords a good illustration. The cost of bread for 1500 persons at that institution is £5 12*s.* 6*d.* If we deduct from this the fifteenth part, the sum will be reduced to £5 5*s.*, or there is a sum of 7*s.* 6*d.* over, which would purchase at 2½*d.* a pound 36 pounds of bread. This would supply 88 additional persons with 6½ ounces of bread, the usual allowance at dinner along with soup; or it would enable most of the 1500 to have a larger share. (Glasgow Report).

With regard to the nutritive power of *sugar*, we have already referred to the condition of the negroes in the West Indies during the season of gathering the sugar crop, when sugar proves nutritive in conjunction with other kinds of food. Most persons are familiar with the experiments of Magendie, in which animals fed on sugar lived well for eight days, and then began to fall off, and ultimately died with all the symptoms of starvation. Starch, as the important constituent of flour, was given to animals by the members of the French Commission, of which Magendie was the reporter, and obviously the main instrument. In the pulverulent form, dogs would not even look at it. When made into a paste, with water, dogs rather than taste it preferred to die of starvation. Even when cooked with butter, lard, sugar, or bread, they refused generally to make use of it; and if some of them did partake of it for a certain time, they never failed to perish of starvation. *Gluten*, however, presented a remarkable contrast to both of the preceding substances. When obtained from wheat-flour or from Indian corn, it presented a phenomenon which did not occur with any of the other immediate organic principles, all of which excite more or less repugnance in the animals to which they were presented. Gluten, whether with a faint odour or with a nauseous smell, was swallowed on the first day without difficulty by dogs, and they continued to make use of it for three months without any interruption. The

quantity taken daily amounted to about four or five ounces, and the animals preserved all the characters of perfect health. Gluten, then, appears to present an anomaly; for all the immediate principles, such as fibrin, gelatine, albumen, &c., were never able, when taken *per se*, to contribute to the proper nourishment of animals. Instead, therefore, of depreciating the nutritive power of bread, and impairing its quality by the action of yeast, it would appear that the object ought to be to add more gluten to the flour when that principle is deficient in quantity.

Now, it appears that what was formerly termed *legumin*, or the albuminous principle in peas, exists in this vegetable to a considerable extent. The flour of peas might, therefore, be advantageously used to improve the quality of flour; split peas, ground to a fine powder, would probably be a more grateful addition. By the laboring classes peasemeal is much used, especially in Scotland; and, looking at the physical power of the inhabitants of that country, we should be inclined to conclude that the food which they use must be of a character eminently adapted to sustain strength. By the Scotch labourers, too, fermentation is not considered essential to the production of bread as it is by many who ought to know better. Panification and fermentation are terms which are frequently confounded together. Now nothing can be more obvious than that bread may be either fermented or unfermented, leavened or unleavened. Nor is it necessary for its digestion that bread should be fermented or decomposed, as the operation might be more aptly denominated. The Jew does not labour under indigestion when he has laid aside his leavened bread during the passover, and applied himself to his unleavened cakes. The same observation applies to the barley, peas, and oat-bread of the Scotch peasant, and also to the cakes of Upper India; for we believe that from Delhi to Cabool, the only kind of bread employed is wheat-cakes, similar to what are termed *scones* in Scotland. Biscuits belong to the same category, and are even administered to invalids when other varieties of bread are considered unsusceptible of digestion. Bread, however, as we have seen, may be raised or rendered vesicular by chemical means, without having recourse to the decomposing process; and we doubt not that the means hitherto used for this purpose may be greatly improved, so soon as scientific care shall be bestowed upon this important branch of economy. We have already mentioned a variety of excellent bread baked with carbonate of soda and muriatic acid, now used to a considerable extent in London. We understand also, that Dr. R. D. Thomson, of Glasgow, has succeeded in making an excellent white bread by the employment of ammoniacal alum and sesquicarbonate of soda, which might be particularly recommended to invalids. The former salt consists of 1 atom sulphate of ammonia, 3 atoms sulphate of alumina, and 24 atoms of water. When sesquicarbonate of soda is acted on by this salt, the alumina is precipitated, and sulphate of soda and carbonate of ammonia (which is driven off), are generated, while free carbonic acid is evolved. The consequence is that the bread rises well, even better than that with soda and muriatic acid. The few grains of Glauber salt produced will either have no effect or a beneficial one, and when it is desirable to avoid the formation of even this minute quantity of the salt, instead of sesquicarbonate of soda, the sesquicarbonate of ammonia may be employed. The discharge of gas is slower than when a liquid acid is

used; the consequence is that the process bears a more striking resemblance to the common operation of baking by fermentation, and the vesicular structure of the loaf is thus rendered more agreeable. (Glasgow Report.)

We have recommended the addition of peas to flour, on account of the large amount of albumen which the former contains. In the common pea the average quantity is about 18½ per cent.; kidney-beans contain 18¼ per cent. The importance of these vegetables in a nutritive point of view is therefore highly worthy of attention. The objections commonly urged to it in consequence of its flatulent nature, may be overcome in a great measure, if not entirely, by digesting it in water at about the temperature of 100°, for several hours before it is used. In soups, for example, it might be used with great advantage to produce a body to that article of diet. Its employment is to be particularly recommended as a wholesome and nutritive ingredient in the food of the poor; and, as will be subsequently shown from the experiments of Magendie, it is greatly to be preferred to the gelatinous matter usually employed in the manufacture of soups. Cabbage, according to Boussingault, is a very nutritive substance, and when dried and reduced to flour it contains a very large quantity of azote.

We have hitherto confined our attention to vegetable food. Experience, however, demonstrates that the diet of man must be presented to him in a variety of forms, and must not be restricted to the vegetable kingdom. At one time it was conceived that scurvy could only be produced by the use of salt provisions. More careful enquiry has, however, shown that scurvy may be engendered by restriction to one kind of diet; so that even vegetable food possesses both a scorbutic and anti-scorbutic agency under particular circumstances. Scurvy frequently attacks the Indian in South America, who lives almost on rice alone. It has reigned epidemically in the rice grounds of Lombardy and Piedmont. The same disease prevailed in an epidemic form in Germany in 1771 and 1772, years of scarcity, when many of the inhabitants were obliged to live on legumes, roots, and even the bark of trees. Scurvy affected numbers of the poor people of France in 1812, 1816, and 1817, when even wild plants were employed as food, in consequence of scarcity. Its effects have been severely felt in India. At the lunatic asylum of Moorshedabad, one third of the inmates are annually affected with scurvy; their diet consists principally of vegetables—all good of their kind. The deleterious influence of a bread and water diet is sufficiently evinced by the fact, that among the prisoners in the gaols of Bengal and Agra, the mortality was 66 per thousand, while among the native troops the deaths were only 10·6 per thousand. How far such treatment of men falling into error is congenial with the benevolent doctrines which "desire not the death of a sinner, but rather that he should turn from his wickedness and live," this is not the place to enquire.

Scurvy is obviously a symptom of bad nutriment—the blood being imperfectly formed or the tissues abnormally deposited. It arises from the want of nourishing food, and a proper admixture of those varieties of diet which were destined for the sustenance of man. The well-known disease at the Millbank Penitentiary—a mixture of scurvy and dysentery—was attributed to the employment of a diet into which succulent vegetables did not enter as an ingredient. Scurvy is therefore one of the

forms which starvation assumes, and bears close analogy to the symptoms described by Magendie as occurring to dogs when they were fed upon articles which did not contribute to their nourishment. Starvation in this form has been traced to its true cause after its occurrence for hundreds of years, because it was detected in gaols and madhouses, and was subjected to a careful examination. How many other forms starvation assumes among the poor and helpless is unknown. From the Registrar-General's report for 1839, it appears that 130 persons died of direct starvation—that is, purely from want of food. But how many persons perished of starvation, obscured by other names, has not yet been pointed out by statistical data. Numerous points for enquiry, however, present themselves to the medical statistician in considering this question. How far are typhus, scarlet fever, and other diseases of large towns influenced by bad and imperfect nutriment; and how far does restriction to meager vegetable diet operate upon mortality in our manufacturing towns?

The following table exhibits the mortality of some of our largest towns compared with the deaths over the whole of England and Wales in 1839:

Mortality in England and Wales	2·17 per cent.
Average mortality of towns in England and Wales	2·62 „
Birmingham	2·58 „
Liverpool	3·18 „
Glasgow	3·26 „
Manchester	3·45 „
Whitechapel	3·86 „

From this table we deduce that the mean duration of life in England is 46 years; in towns 38 years; and in Whitechapel 26 years. How far is this mortality attributable to inefficient nourishment? We are convinced that those who have had much intercourse with the poor in their wretched hovels, will bear us out in confirming the propriety of this question. The great burden of the starvation and mortality falls upon the poor; but bringing as it does with it a train of evils and diseases, the consequences must, in some measure, affect the richer portion of the community, in the form of infectious diseases; so true is it that the prosperity of any one class of the population is dependent upon that of all the others.

Experience, the structure of the teeth, and of the digestive organs of the human body, demonstrate that the flesh of animals should enter as an element into the food of man. Some kinds of animal food are digested with much greater rapidity than vegetable food. Bread and coffee require about $4\frac{1}{4}$ hours; fresh beef from 3 to $3\frac{1}{2}$ hours; salt beef from $3\frac{1}{2}$ to $5\frac{1}{2}$ hours; salt pork from $4\frac{1}{2}$ to 6 hours; mutton $3\frac{1}{4}$ to $4\frac{1}{2}$ hours; fowl 4 hours; veal from 4 to $5\frac{1}{2}$ hours; tripe 1 hour; pig's feet 1 hour. But these numbers depend considerably upon the circumstances under which the food is swallowed. If the quantity taken be in excess, slow digestion is the result; and the same remark holds with respect to passions of the mind: exercise also promotes digestion. It is interesting to know that those substances which are most nutritive are not those which are most rapidly digested. Gluten, which, according to Magendie, is exceedingly nutritious, has been found in the stomach five hours after being swallowed. Pig's feet, on the contrary, which are di-

gested in an hour, contain a large proportion of gelatine, which, according to the experiments of Magendie, possesses very inferior nutritive properties. To those who are favoured with the blessings of this life, any of these substances may be procured at will. It is when viewing the conditions of the poor that we must consider diet in an economical point of view; and with them the point is not how to create an appetite, but how to satiate it in the cheapest and most substantial manner.

Papin was the first individual who introduced the method of preparing food from bones, by exposing them to the action of water and steam under pressure in his digester. By this operation a greater quantity of gelatine or animal matter of the bone was dissolved than could be procured by simply boiling bones in water at the ordinary temperature, although Papin considerably exaggerated the advantages of his invention. Papin was a Frenchman, and practised medicine in London, about 1680. He published a work in 1682, on the manner of softening bones, and cooking all sorts of meat; he declared that his digester could transform an old hard cow into excellent meat, (*vache dure et veille en excellente viande.*) At the commencement of the French revolution, when provisions were dear, the attention of men of science was directed to the improvement of the food for the poor. Proust, D'Arcet, and Pelletier took the lead in this attempt at amelioration, but, carried away it appears by the enthusiastic feelings of the times, they made a report to government which future enquiry has not corroborated. The government issued a public instruction to the following effect: "A bone is a tablet of soup formed by nature; a pound of bone gives as much soup as six pounds of meat; bone-soup, in a dietetical point of view, is preferable to meat-soup."—It is obvious, from these high-flown expressions that gelatine and nutritive matter were considered synonymous. Such views continued to be entertained by many Frenchmen, but by none more conspicuously than by the younger D'Arcet, who inherited the gelatine mania from his father. According to him by using the bones of four oxen a fifth is created. At his suggestion the method of extracting gelatine from bones under strong pressure, by the action of steam, was introduced into some of the hospitals of Paris, especially the Hôtel Dieu. The gelatinous solution employed for making the soup at the hospitals, is extracted by submitting to the action of high-pressure steam, the bones proceeding from the meat used in the house; these bones have undergone two decoctions, the first in the morning in preparing the ordinary soup, and the second in the evening for producing the *bouillon maigre*. These bones, after being freed from cartilages, are broken up and are introduced into cast-iron cylinders, where they are exposed to the action of steam, at the temperature of 219° to 221°. The first product of this action is fat, which separates while the gelatinous water cools; the gelatinous fluid is then employed to form the basis of the soups for the sick, being mixed with meat and vegetables. A commission appointed to report upon this soup, gave a favorable opinion of its nutritive power; while the physicians and surgeons of the Hôtel Dieu gave an opposite opinion in the following terms: "The soup made with the gelatinous solution is of bad quality; this soup is more liable to putrefaction than common soup; it possesses a disagreeable taste, which is capable of inducing even disgust; it is less digestible than common

soup, and may even impair the functions of the digestive organs; it contains a smaller proportion of nutritive matter than common soup, and the nutritive matter which it does contain, is inferior in quality to that of ordinary soup." The consequence of this report was an order for abolishing the use of the apparatus. But, before removing it, Soubeiran, a distinguished chemist, was consulted; he advised the extraction of the gelatine by means of acids, and disapproved of the vapour method. About the same time, M. Donné made some experiments upon the nutritive properties of gelatine. He swallowed three times a day an ounce and a half of gelatine along with about three ounces of bread. In six days he lost two pounds of weight, and was tormented all the time with the sensation of hunger, and experienced great debility. Two dogs, to which he gave gelatine, refused to partake of it, even when presented to them in an attractive form. M. Gannal, a manufacturer of glue, had observed that rats, which are always ready to devour animal substances, would not touch gelatine nor glue. He made experiments upon five members of his family, and drew the conclusion that gelatine is not only incapable of nourishing human beings, but that it is even hurtful to health, when introduced beyond a certain proportion into regimen. About the same period Edwards and Balzac found that bread and gelatine, when given together, were nutritive but that they are insufficient; that soup and bread are capable of supplying complete nourishment, and that the addition of meat-soup to a regimen of bread and gelatine, is adequate to nourish the human body in a complete manner.

About 1831, a commission was appointed by the French Academy to enquire into the truth of these apparently contradictory statements. The commission, after continuing their experiments for nearly ten years, have now published their report. But the results, so far as their importance is concerned, are neither worthy of the time which has been bestowed upon them nor the space which the report occupies. For with the exception of the observation of the fact, and this we admit is a curious one, that animals can subsist for a considerable period of time on gluten alone, we are not aware that any of the deductions are novel. The first experiments on animal substances were instituted on gelatine. The gelatine was extracted from bones by different methods. But we believe the high-pressure steam system was not adopted. Indeed we think there is every reason to believe that gelatine when acted upon in the manner suggested by D'Arcet, is deprived of ammonia and is converted into glue. So that the soup proposed by D'Arcet might with greater propriety be denominated glue-soup. The gelatine produced in this manner is destitute of the characteristic property of forming a jelly with water. Indeed our surmise is put beyond doubt by the fact stated by those who have examined the soup of the Hôtel Dieu, that the solution of gelatine when evaporated, left a hard extract, presenting the character of Flanders glue. We think it possible, however, that a gelatinous solution might be extracted from bones under pressure, without the disengagement of any ammonia, or without the evolution of any disagreeable odour. We draw this inference from a carefully conducted experiment in which a bone lost by exposure for an hour to a temperature of 230° in a Papin's digester $14\frac{1}{2}$ per cent. The resulting liquid possessed a highly agreeable flavour, nor was the slightest ammoniacal smell perceptible. The advan-

tage of a considerable elevation of temperature is obvious, when we contrast the preceding experiment with another, in which a bone after boiling an hour and a half in water in a common pot lost only $5\frac{1}{2}$ per cent. (Glasgow Report.) Now, according to the French commission, the constitution of bones in an economical point of view is as follows:

	Sheep's feet bones.	Ox-head bones.
Water	47·22	22·87
Fat	5·55	11·54
Gelatine	17·30	27·99
Phosphates	12·42	32·77
Insol.-animal matter	17·51	4·83
	100	100

From this table we may learn that more gelatine will be extracted by high pressure, when we consider its amount, and when we take into view the facts we have previously adduced.

From the experiments of the commission, we learn no more than we previously knew: viz. that animals are incapable of subsisting upon the exclusive use of an elementary animal principle. The experiments of Donné and Gannal had proved this in reference to gelatine; but the researches of Edwards had shown, contrary to what the commission seem anxious to admit, that gelatine when administered in conjunction with other articles of diet, may serve for the purposes of nutrition. Gelatine extracted from bones by the action of water is, according to the commission, less nutritive than gelatine extracted by the use of acids. When gelatine prepared by the former method was presented to dogs, some of them partook of it once or twice, while others preferred rather to die than touch it. If the bones were digested in acid, and the residue dissolved in water, dogs lived upon it for a month and were well nourished, especially when the bones were those of sheep's feet: but after this period they exhibited a dislike to this meal. In the choice of acids we find that it is not a matter of indifference which we employ; for by acting upon gelatine by nitric acid, we have procured by distillation by no means inconsiderable traces of prussic acid. Muriatic acid appears to be, considering all circumstances, the most convenient for the object in view. We believe, therefore, that gelatine procured by the action of acids, might be employed advantageously as the basis of soups; but we conceive that the facts previously adduced are sufficiently condemnatory of the process of extracting gelatine from bones by long-continued high-pressure steam.

It would be of essential advantage to the poor, if attention were bestowed on such methods of preparing a cheap and efficient nutriment. We believe that, at least in the present condition of the country, especially among the poor inhabitants of towns, a comfortable meal can rarely be procured; and that it would be highly advisable to form institutions where poor labourers might be supplied with a cheap meal at their own cost. Under these circumstances it would be necessary to employ cheap materials. But care should be taken that they were of a wholesome and nutritious quality. For this purpose it would be essential that they should be superintended by individuals qualified to judge of the qualities of food, and acquainted with the chemical principles necessarily connected with the various processes employed in preparing and cooking

the various articles of diet. We should recommend also that greater variety in the routine of the dietaries should be inculcated. The poor ought not to be fed like the inferior animals, continually upon the same materials. We are convinced, from the proposed improvements in the dieting of the Glasgow poor, that the dinner may be different on each successive day; and that the industrious labourer who constitutes the sinew of the country, may, in his declining years, be treated more in conformity with that class for whose comforts his best energies have been spent, and for whose existence his well-being is essential.

ART. XVI.

On the Remote Cause of Epidemic Diseases. By JOHN PARKIN, Graduate of the University of Erlangen, &c. &c.—*London*, 1841. 8vo, pp. 198.

WHEN an author presents to the world views professing to be original, two important questions arise, the one as to their truth, and the other as to their novelty. Dr. Parkin has been at the trouble of writing a book to demonstrate that gases extricated from the bowels of the earth by volcanic action are the remote causes of epidemic diseases. In supposing that there is anything new in this notion, he merely shows that he is little versed in the literature of his subject. Early in the sixteenth century, Horatius Lymbisanus (Orazio Limbisano, M.D.) published a work entitled "De terræ motu prout pestis causa est disputatio," (4to, Neapoli, 1629.) What his particular opinions were we do not know, having never been able to get a sight of the book; nor do we think it needful to hunt through the numerous writers who have alluded to the subject in one way or other. For Dr. Parkin's edification, however, we will quote the following passage from an author who is, or ought to be, very well known—*Sennertus.*

"Verum præter cœlum, aliæ etiam plures causæ dantur, à quibus aëri pestilentia communicatur, atque ipse inde pestilens redditur. Primo scilicet aër venenatus et pestilens redditur, cum venenatæ in infimis terræ cavernis diu contentæ auræ copiosius aëri permiscentur. Halitus illi venenati gignuntur ex aëre diu concluso, et venenatis auris metallicis mixto, stagnantibus aquis alicubi conclusis et putrescentibus. Commoventur autem illi halitus venenati iisque exitus sæpe patefit à terræ motu; extantque passim in historiis exempla terræ motuum quos gravissimæ pestes secutæ sunt." (De Febribus, Lib. iv. c. 2.)

This, it will be observed, is almost to an iota the opinion of Dr. Parkin as expressed in chapter iii. of his work. It is singular, also, that Dr. Parkin should not have thought Noah Webster, an author whom he quotes with reference to other matters, worthy of mention in connexion with the supposed volcanic origin of epidemic diseases, for this writer labours hard to establish a general relation among epidemics, volcanoes, earthquakes, and comets, and attempts in several instances to show the connexion between particular epidemics and particular earthquakes, although he is doubtful whether the intemperaments of nature produce disease directly by their action on the living body, or indirectly by blighting the products of vegetation, and thence deteriorating the chief articles of food.*

* A Brief History of Epidemic and Pestilential Diseases, &c. 2 vols. 8vo.—Hartford, 1799.

So much for the novelty of the volcanic hypothesis: let us now enquire into the validity of the arguments adduced by Dr. Parkin in its support. To entertain this hypothesis, even for a moment, it must of course be admitted that the spread of all epidemics observes laws nearly or entirely similar. Now our author's remarks throughout the volume relate principally to *cholera*, and he seems to take it for granted that this disease will serve as a type of epidemics in general. We allow that there are some points of analogy between the course and mode of extension of cholera and influenza, but with respect to most epidemics we can see no features in common, except their attacking multitudes of people, visiting various regions of the earth, and being frequently preceded or accompanied by unusual conditions of the atmosphere—grounds surely insufficient for referring them to a common law or a similar agency. Granting, however, for the sake of argument, that one epidemic will serve as a type of all the rest, we will proceed to examine the reasoning by which Dr. Parkin endeavours to carry out his analogy between the cause of epidemics and volcanic action.

"If," says he, "we generalize the phenomena attendant on the march of epidemics, we shall find that they are so regular and uniform as to deserve to be set down as the laws of the disease. More than this, if we compare these laws with those attendant on volcanic action, we shall find that they are the same or similar, as will be apparent by the recital of a few of the principal phenomena observed during the operation of this process on the crust of the globe." (p. 39.)

1. The first coincidence stated by Dr. Parkin is, that the effects of volcanic action are observed along particular lines of the earth's surface, and that the same is the case with respect to epidemics, whence a striking analogy between the two.

Now, it is evident that the mere fact of epidemics following particular lines on the earth's surface, would no more establish their connexion with volcanic action than with the Great Western Railway, or anything else that observes a particular line on the earth's surface, unless it could be shown that volcanic actions and epidemic diseases observed the *same*, or *corresponding* lines. This is not asserted by Dr. Parkin in his illustration of the law just announced, but further on he does actually venture on such a statement with reference to the *black death* and the *cholera*.

"Simultaneously with the commencement of these diseases, there were experienced severe and remarkable concussions of the earth, as well as other signs of the existence of volcanic action; and which gradually extended over Asia and Europe, in the same direction and along the same lines as those taken by the diseases themselves." (p. 48.)

That volcanic phenomena, and natural convulsions of all kinds, were extraordinarily frequent during the prevalence of the black death is very well known; since the cholera made its appearance in 1817, there has been an average of volcanic action throughout the world not greater than that observed during the same number of years at most other periods —indeed we rather think less, but will not insist on the point, as we have not leisure to investigate it properly: that either the black death, or the cholera, observed the same lines as the volcanic actions contem-

poraneous with them, is one of the most bare-faced assertions we have met with for some time.

With respect to the black death, our author adduces sufficient evidence of the prevalence of the volcanic phenomena over the world in general, simultaneously with that of the pestilence; but there is not a syllable to identify the lines in which they moved. With respect to the cholera, he shows that a short time after its great epidemic eruption in India, several shocks of earthquakes were experienced in different parts of Bengal; but we are not informed that the course of the disease bore any particular geographical relation to the course of the subterraneous agency. In the year 1819, a more violent earthquake than had before been known in India, shook the Peninsula, but we still hear nothing of the *lines*, and between the years 1817 and 1819, the cholera seems to have been moving in various directions, and doing its work with uncommon fury, without any appreciable volcanic assistance. In 1821 the epidemic marched into Persia, but no earthquake is to be met with till 1824, and even here there is no coincidence of places. Once for all we ask *where are the lines?* It would evidently be useless to follow Dr. Parkin and the cholera into Europe, where all we meet with about earthquakes is that they "were felt after the appearance of the disease in Odessa, in Northern Europe, and along the Rhine, while even in England, where such phenomena are almost unknown, slight shocks have been felt occasionally from that time to the present." (p. 140.) For the rest our author is obliged to have recourse to meteorological phenomena, and atmospheric vicissitudes, which he *presumes* to be connected with volcanic action.

2. Another law, which, according to our author, is characteristic alike of volcanic action and epidemic influence, is the regularity of their progress, both chronologically and geographically. In his remarks on this law Dr. Parkin treats us to a *lucus à non lucendo;* for he admits that "this rule is not so evident with regard to the formation of volcanic vents on account of the want of historical data in such instances, their production being frequently the work of ages, it is yet sufficiently clear to cause it to be set down as one of the laws of volcanic action; for the vents along a particular line are not formed at once, but in succession;" in the same strain he adds that the minor effects of the same cause, earthquakes to wit, afford better illustration of the progressiveness of volcanic action; and the upshot of the whole appears to be that since volcanic actions have been observed at successive periods, and in different places, their occurrence is therefore *chronologically and geographically regular*, and that a similar regularity in the occurrence of epidemic diseases binds them in the most intimate relations with volcanic actions. (pp. 47-8.)

It is quite clear that all sublunary events must occur either simultaneously, or in succession, and in the same place or in different places; and Dr. Parkin's reasoning, therefore, applies no more to the subject in hand than to any other in which succession and progression are concerned.

3. According to Dr. Parkin, a third law of subterranean action is, that its effects are less on secondary than on tertiary strata, while they

are seldom witnessed on primary formations; and the same law applies, with equal force, to the march of epidemic diseases, which is most frequent over tracts of tertiary formation, comparatively rare on secondary strata, and almost unknown in districts resting on primary formations.

Our author, on the whole, is correct in this statement, with respect to volcanic action as now exhibited on the earth's surface; but in extending it to epidemic diseases he is merely indulging in one of those hasty generalizations in which he seems so greatly to delight. As usual, he appeals to *cholera*, but in the present state of geological knowledge we are in no condition to speculate on the relations which this or any other extensive epidemic may bear to the geological characters of the countries over which it prevails. Thus Asia has been the cradle of various pestilences, which have swept for thousands of miles over its surface before reaching the other quarters of the globe; but the geology of Asia is yet very imperfectly known, and we are convinced that if we were to point out the course of an epidemic over Asia to Buckland or Conybeare, and ask what were the geological characters of all the districts through which it passed, they would at once declare that they did not know. Of a great part of the interior of Africa neither the geology nor the diseases are known; and if Dr. Parkin is acquainted with the geology of every part of America, we suspect he knows considerably more of the matter than anybody else. In favour of the connexion between epidemics and recent geological formations, Dr. Parkin adduces the well-known fact that *cholera* is observed to be frequent along sea shores and the banks of rivers; but we are not aware that this obtains generally with respect to other epidemics, and even with respect to cholera it argues quite as much on the side of low and moist localities as of tertiary strata. The best evidence in favour of his geological law adduced by Dr. Parkin is the course taken by the cholera on its first entrance into Europe.

"It will be seen," he says, "that the tract of country traversed by the epidemic with such rapidity forms one single and immense tertiary deposit; being bounded to the north by a chain of primary mountains through a great part of its extent. This barrier here, as elsewhere, was sufficient to prevent the spread of the disease in that direction; for, although extending along the whole of this plain from east to west, the disease was not seen on the southern side of this range of mountains—as Switzerland, which is situated in the midst of the chain, not only escaped then, but has, I believe, continued free from any visitation of the epidemic up to the present time," &c. (p. 55.)

But these observations, though specious, have no real weight. Doubtless they illustrate the influence of *locality*, but they leave the geological question untouched, as will be evident when we consider, on the one hand, that extensive levels are never to be found on primary formations, and, on the other, that mountain ranges of any elevation consist, for the most part, of primary or transition rocks. All, therefore, that Dr. Parkin's observations go to prove is, that cholera traverses plains easily, but does not readily ascend mountains; which is just what might be expected, and what has been repeatedly observed with regard to epidemics in general.

4. The fourth law stated by Dr. Parkin is, that the effects of volcanic action are much greater and more perceptible near the sea and other large collections of water, as lakes, rivers, &c. and that the same

obtains with respect to epidemic diseases. We believe this law, as a general one, may be admitted with reference to volcanic action. In applying it to disease, our author betakes himself once more to his favorite *cholera*. No doubt this disease, for some reason which we attempt not to explain, has a disposition to follow water-courses, but it has also been frequent and severe where there was little water. With regard to other epidemics, as typhus, influenza, &c., we are quite unaware of any particular relation to water, except in as far as low and damp situations are unhealthy, and may therefore be favorable to the production of many diseases.

Dr. Parkin errs greatly if he supposes that any point in science can be established by such vague generalities as these, which are in effect not worth arguing upon. In all such cases the *onus probandi* rests with the assertor, and we shall think it time enough to consider the nature of the relation borne by epidemics in general to the sea, lakes, and rivers, when some evidence of the existence of such relation beyond the mere assertion is brought forward.

5. The last law common to volcanic actions and epidemic causes on which we have to comment is "their limited duration, their periodical return, and their total cessation in that particular locality after certain definite periods." (p. 60.) Dr. Parkin's illustrations of this law are exceedingly meager, and for a very plain reason, namely, the extreme dearth of materials. With regard to volcanic actions in particular localities having a limited duration and an end, this simply places them in the same category with everything else which is neither eternal nor immortal. With regard to their *periodicity*, all the evidence offered by our author is contained in the following passage.

"Volcanoes only throw out lava for a short period, as a few hours, or a few days, although the minor products of the same process, or aqueous vapour and gaseous substances, continue to be evolved for a much longer time, as several months. When, however, a vent has been once formed in any locality, eruptions are sure to be experienced from time to time, in the same spot, although the period of their return varies much in different situations. The same circumstance is observed with regard to earthquakes, except that they return more frequently and at shorter intervals than the eruption of the volcano; for although the duration of a single shock is seldom more than a few minutes, still a succession of shocks is sometimes felt in the same spot for many weeks, or even months. They then subside entirely for a period which varies under different circumstances, when they again return and again subside, to reappear after another interval; for the same continuous tracts, as Lyell justly observes, are agitated again and again. In some situations they are found to return at regular and fixed periods or months in the year, more particularly the summer season." (pp. 60-1.)

Dr. Parkin's remarks on the corresponding periodicity of epidemics are of the same feeble and unsatisfactory character. With respect to the final cessation of epidemics in the places where they originally appeared, we cannot conceive what has led him to an assertion so obviously in the face of all fact. The plague still exists in the places where it was first known; the cholera still exists in India; we know not in what part of the east smallpox and measles originated, but they exist all over the world: in short, it is needless to increase the catalogue of epidemics which have continued from time to time to infest the country of their

birth; for all the more important epidemics have done so, except the sweating sickness and the black death, the latter of which can hardly be considered as a distinct disease, having evidently been nothing more than an intense form of plague, complicated with typhoid pneumonia. The black death, however, is the only instance adduced by our author in support of his sweeping assertion. He is of opinion that this disease, or one similar to it, exists in the present day. Without stopping to enquire into the truth of this assertion, we think this the right time for asking a question which suggested itself the moment we took up Dr. Parkin's book, but which we delayed proposing in order that we might examine all his laws and give his arguments fair play. It is this: If volcanic action be the cause of epidemic disease, how is it that nothing is laid to the charge of Hecla, one of the most indefatigable of volcanoes? Hecla is many hundred miles nearer to Scotland and Norway than Ætna or Vesuvius to Egypt and Syria; why, therefore, are the two former countries not perpetually ravaged by the plague or some other pestilence? We might also ask, why should Aleppo or Cairo, situated more than a thousand miles from Ætna or Vesuvius, suffer so much more from their pestilential influence than Naples or Catania, situated at their very base? We fear that these and a few similar questions, rigorously pushed home, would reduce the volcanic hypothesis to a very helpless condition. But it is time to bring our strictures to a close. Before doing so, however, we should add, that our author regards endemic diseases as originating from the same volcanic source as epidemic diseases. This he argues from two alleged circumstances: First, that all endemic maladies have at some former period been epidemic; and secondly, that they prevail in their greatest extent and intensity in those regions where volcanic action is most manifest. As on former occasions, one or two feeble instances serve to establish these positions satisfactorily to our author's mind; that they are, however, altogether erroneous will be very easily perceived. When has cretinism or Barbadoes leg been epidemic? And what have the pestiferous vapours breathing from the swamps of the African rivers to do with volcanic action?

Dr. Parkin comments at some length on the natural history of volcanic operations; and on the whole he seems to make a better figure as a geologist than as an etiologist of epidemic and endemic diseases: this part of the subject, however, is not within our province. Although the foregoing hypothesis has received very poor support from the arguments of Dr. Parkin, we would not be supposed to reject it as altogether unworthy of consideration. With respect to one epidemic, cholera, the fact of its advancing rapidly in opposition to the strongest winds is much in favour of the belief that it is propagated by some cause operating beneath the earth's surface—whether by the extrication of miasmata, or by some change in the electricity or other properties of the surface; nor is it impossible that such cause may participate in the nature of volcanic action. The question is evidently one to be kept in view, but certainly not one to be solved in the present state of science.

Art. XVII.

Verhandelingen van het Genootschap ter Bevordering der Genees en Heelkunde te Amsterdam. Eerste Deel. Eerste Stuk.—*Amsterdam*, 1841. 4to, pp. 54-93. With 4 Plates.

Transactions of the Society for the promotion of Medicine and Surgery at Amsterdam. Vol. I. Part I.—*Amsterdam*, 1841.

The first part of this volume contains an account of the general transactions of the Society since 1835, when the last volume was published by that Society, of which, under a new name and new rules, the present is the immediate successor. It includes abstracts of the communications made at their several meetings, and the oration delivered by the president, Tilanus, on the fiftieth anniversary of the establishment of the Society.

In the second and larger part, are contained five of the chief papers communicated by members of the Society, and of each of these we propose to give now a brief account.

I. *A remarkable Case of Tubercles of the Brain, by G. C. B. Suringar.* The patient was a scrofulous girl, eleven years old, in whom there slowly came on severe headach, with loss of power over the lower limbs, which gradually increased to complete paralysis of them, and of the upper limbs, and immobility of the eyeballs. Her head was in the later stages of the diseases thrown backwards, though she had some voluntary power over it: her sight was not much affected, and the iris moved freely, but, as both upper lids had fallen and nearly closed, she was obliged to move her head till the rays from what she wanted to see could enter the narrow aperture between the lids. She died about four months from the commencement of her illness, and on examination each of the optic thalami was found to contain a large mass of firm granular tuberculous matter. The rest of the brain was nearly healthy, and no tuberculous deposit could be found in any other organ.

After relating his case, the author proceeds to a judicious review of its characters as compared with those described by all the chief writers upon the disease; but of this, as most of the works he quotes are well known in England, we need perhaps give no account.

II. *Anatomical and Pathological Remarks on Inflammation of some internal parts of the Eye, and, in particular, on Choroiditis as the cause of Glaucoma, by J. L. C. Schroeder van der Kolk.* This paper contains some observations of high interest on both the healthy and morbid anatomy of the eye, which we shall give in the author's own words, although differing from him in several points, both as to the truth and the novelty of his views.

"The choroid," he says, "is nothing but a prolongation of the pia mater of the brain, on which are distributed externally the *vasa tortuosa*, as they are called, while on the inner surface or tunica ruyschiana, the vessels pass into the most delicate winding ramifications which appear to secrete the pigment. These vessels however by no means terminate at the boundary of the choroid; they go on, as is well known, to the iris, and a very beautiful expansion of them forms the *corona ciliaris*, or ciliary processes. These processes, which consist of elegant arched folds, are, in my opinion, very important parts of the eye: their folds fit into those of the *zonula zinnii*, which is placed around the lens, and constitutes the most anterior part of the *membrana hyaloidea*, or of the vitreous humour. This connexion however is, according to my observations, rendered much more intimate by a great number of the finest capillary vessels which pass from the

fringe of the *corona ciliaris* into the zonula behind it, and from which there arise some most important distributions of vessels, which have not yet been accurately enough described. The arrangement has indeed been observed and figured by Henle and other anatomists in the eye of the immature fœtus; in the adult its existence has, by others, been doubted; but, in a most fortunate injection, I have very distinctly filled them in an adult healthy eye, and have found that from the outermost edge of this zonula zinnii, there pass extremely delicate vessels into the hyaloid membrane. (p. 39.)

"The vitreous humour is, according to my observations, surrounded by a very thin serous membrane, in which there run some extremely delicate vessels, which can only very rarely be filled with a fine injection. If this membrane be taken off the vitreous humour, (which I once succeeded in accomplishing in an extremely well-injected eye,) one sees that these very delicate vessels are distributed all over it: but without this previous and very difficult injection it is, in consequence of its extreme thinness and transparency, hardly possible to discern the membrane itself.

"The vessels in the membrane, which probably serve for the nutrition of the vitreous humour, arise from a double source. Some shorter ones, which for distinction's sake I shall call *vasa brevia membranæ hyaloideæ*, come from the outer edge of the zone of Zinn, whence they spread with numerous fine branches over the hyaloid membrane, and especially over its foremost part; others arise from the *arteria centralis retinæ*, immediately by its branching in the retina. These last are distinguished by their fineness and their straighter course from the vessels of the retina itself, and they pass to the *vasa brevia* just mentioned: there appear to be four of them, and I call them *vasa longa membranæ hyaloideæ*.* The vessels of the vitreous humour are thus connected through the medium of the zone of Zinn with those of the ciliary processes and of the choroid: those of the retina, which are very numerous and much larger and more tortuous than those of the vitreous humour, terminate for the most part in the retina itself, but partly, as a preparation which I possess seems to show, unite with the fine vascular network of the zone of Zinn and of the ciliary processes. (p. 40.) .....

"Hence then it appears that the vessels of the choroid connect it with the iris, ciliary processes, zone of Zinn, retina, and vitreous humour. But from this general union there arise some still finer vessels. In the minutely injected eye already mentioned, it appears that some very delicate branches pass from the anterior edge of the zone and ciliary circle to the anterior surface of the capsule of the lens, (in a course, however, different from that which they have been described as taking in the fœtus.) The branch of the arteria centralis retinæ, which in the fœtus perforates the vitreous humour to distribute itself in the posterior portion of the capsule, completely disappears at a later period, and is, I suspect, replaced for the nutrition of that part by some very small branches from the zone; this, however, I have never been able to prove by injection. (p. 41.) .....

"Besides these vessels there appear also to be some serous ramifications, (which in a healthy eye are too fine to be artificially filled,) passing from the outer edge of the iris over the posterior surface of the cornea in the *membrana Demoursii;* at least, in a chronic inflammation of the eye they may be so dilated as to be filled with a fine colouring material, and in this state I possess an excellent preparation of them. .....

"Hence, then, one sees that the place from which most vessels ramify into the internal parts of the eye, and which is thus in the highest degree important, is constituted by the meeting of the vessels of the choroid and ciliary processes with those of the zone of Zinn and retina, from whence other minute branches distribute themselves into the capsule and the hyaloid membrane." (p. 41.)

From this general anastomosis of the vessels of the choroid, the author

* These last vessels have been injected by Mr. Dalrymple, (Tyrrell on Diseases of the Eye.)

thinks that its affections must have a more important influence than is generally supposed in inducing morbid changes in other parts of the eye. But his chief purpose is to show that the cause of glaucoma is a chronic inflammation of the choroid, and a consequent effusion of plastic lymph between it and the retina. The serous character of the membrane renders effusion of lymph the most natural result of its inflammation, and all the signs of glaucoma may be explained better by supposing this to have taken place than in any other way. The fulness of the eyeball, by the addition of serum and lymph to its contents, gives that sensation as if the eye were bursting, which exists in the early stages. The pressure of the retina from behind forwards, producing partial paralysis of it, an alteration from its due relation to the focus of vision, and a diminution of the anterior chamber, accounts for the loss of sight, a loss which, though it varies in its degree, is always more than is proportionate to the change of colour. The colour of the effused lymph, while it is yet soft and transparent, produces no evident change in the aspect of the pupil, though the loss of sight may be considerable; but when it is condensed it gives the peculiar hue of glaucoma, and that *deep* and *concave* appearance, as if it came from some distant hollowed surface, which cannot in any way be reconciled with the common notion that glaucoma depends on any change of the vitreous humour. With the effusion of lymph there probably also exists a diminished secretion of pigments, giving rise to the altered colour of the iris, and having some share in producing the glaucomatous hue. The immobility and dilatation of the pupil indicate an affection of the ciliary nerves: and its being generally increased in width (so as to be like the pupil of a ruminant), renders it probable that the dilatation depends, not on any disease of the retina, but on an affection chiefly of the long ciliary nerves which run horizontally by the two long ciliary arteries.

The morbid appearances found in glaucoma confirm the view of it which is here taken. The vitreous humour has never been seen to have the peculiar colour: wherever it has been altered at all, its colour has been yellow or gray or reddish; and these changes, in all probability, ensued subsequently to the change in the choroid. Neither can an amber hue of the lens account for the colour; for this change is by no means constant in glaucoma. A diminished secretion of pigment, which the author has observed in two cases of glaucoma, will not better account for the peculiar colour; for the tinge resulting from this defect is gray, and when it exists in an extreme degree, as in albinos, there is certainly no greenish hue. The real source of the peculiar character of the disease was indicated by two cases which the author was able to examine after death. In the eye of an old woman, affected with amaurosis and distinctly glaucomatous, he found a layer of plastic lymph between the choroid and retina, somewhat more than a line in thickness, occupying the posterior half of their circumference, and already seeming to contain some small vessels. In another eye he found a similar effusion in a more advanced stage, the glaucoma having existed six years, and the lymph being more organized.

Such is the chief evidence for the author's explanation of glaucoma.

The remainder of the paper is occupied by criticisms of the opinions which others have held on the nature of this disease, and contains, besides, some miscellaneous observations on the anatomy and diseases of the

eye; among which the author denies (absurdly we think) the existence of the membrana jacobi, which he considers as nothing but a precipitate from the serous fluid which always exists between the choroid and retina. He observes, also, that that which is commonly described as an ossification of the retina, is in reality an ossification of a membrane between it and the choroid (a fact noticed by Van der Lith); and he describes and figures remarkable cases, in one of which he succeeded in injecting the vessels of the anterior part of the capsule in cataract with chronic inflammation of the capsule, and in another injected a fine vascular network in the membrane of the aqueous humour which had been similarly affected.

The long abstract we have given of this paper compels us to abbreviate what remains to be noticed of this volume.

III. *Subcutaneous Emphysema, especially of that in the neck coming on without any previous external injury, by W. H. de Vriese.* The patient was a little boy, six years old, who had been suffering for some time from hooping-cough, and in whom there suddenly supervened excessive dyspnœa with pain in the right side. When the author first saw the child he was in a state approaching to suffocation; but his attention was chiefly attracted by a swelling extending above the right clavicle, which had gradually formed after a severe fit of coughing, and by an inequality of the pulsations of the two carotid arteries, that of the right being small and interrupted, that of the left full and more regular. The swelling was not painful except on deep pressure, and by that means one could, as it were, force back the elevated skin to the very base of the tumour, which, however, on remitting the pressure again, returned to its previous size and shape. The patient was occasionally seized with severe cough, and expectorated a good deal of bloody mucus; his skin was burning hot, his tongue dry and hard, his thirst insatiable.

Active antiphlogistic treatment was adopted, with some relief to the general symptoms; but by the end of the next day the emphysema, (for by it the swelling in the neck was produced,) had spread over the whole face and head and a part of the chest, and on the day after extended to the abdomen, and the arms and legs; the skin in some parts being so distended that it seemed ready to burst at every cough. In this condition the patient continued for some days, the cough and dyspnœa remaining very severe, though, by the steady use of calomel, purgatives, &c., the general health, and especially the very disordered state of the digestive organs, had been greatly remedied. On the seventh day from the beginning of the emphysema, several punctures were made in the skin of the chest, through which a large quantity of air escaped, but without producing any relief beyond reducing the tension of the skin; but, in spite of bandages, the first fit of coughing distended it again almost as much as ever. The author, therefore, determined to cure, if possible, the cough, and leave the emphysema to itself; and, succeeding in the former by narcotics, (belladonna, &c.) and tonics, the latter in a few days began gradually to decrease, and at length disappeared, leaving the patient however in a state of debility from which he only slowly recovered.

The author presumes that, in this case, emphysema of the upper part of the right lung was first produced, and that then some of its vesicles having burst, permitted the air to pass into some adhesions uniting its

surface with that of the pleura, and thence into the cellular tissue of the whole body. And, rare as must be the coincidence of circumstances permitting such an event, we cannot suggest any more probable mode of explaining the phenomena of the case. Several cases similar to the present are recorded by authors.

IV. *Post-mortem Examination of a case of Ventro-Uterine Pregnancy, by J. Van Dam.*—This is a yet rarer case than the preceding. The patient was a woman who had twice borne children naturally. At the end of a third pregnancy labour came on, but after two days ceased without delivery, and the abdomen continued distended. Six days afterwards the motions of the child ceased, and from this time she suffered, during the seventeen subsequent months, repeated attacks of peritonitis. At the end of these the femur and some other bones of a putrid fœtus were discharged through the vagina, and the author determined to remove the remains by a Cæsarean operation. "By an incision through the abdominal walls," he says, "five inches long, and a hand's breadth to the left of the linea alba," (where the chief swelling was,) "a sac was exposed, whose walls were firm, half an inch thick, and adherent to those of the abdomen. A great quantity of pus and blood was let out of it, and the skeleton of a mature fœtus was removed still connected by ligaments, and fixed to the base of the sac so that it seemed to fill the whole cavity, and could with difficulty be removed. The sac itself appeared to extend down into the pelvis." After this she slowly recovered, but for several days fecal matter was discharged from the wound, proving that the sac was connected with the intestine. It gradually ceased, however, and the author supposed that the case had been one of utero-tubal pregnancy.

Seventeen months after her complete recovery, this woman became again pregnant, and continued well till in the last month of her term the motions of the fœtus suddenly ceased, and she became restless and dejected. A few days after this, the cicatrix of the former operation became elevated as if it would burst, and very tender, and it was determined to perform the Cæsarean section again; but on the morning of the day fixed she began suddenly to complain of tightness in the chest, convulsive motions ensued, her pulse sank, and death occurred in the course of three hours.

On examination the child was found within the peritoneum in an envelope occupying the epigastric and umbilical regions, surrounded by a transparent membrane, over which there was another firm fleshy covering traversed by numerous blood-vessels; this appeared to be the outermost membrane of the ovum unusually strong, and torn away from the border of the placenta which was in part visible at the right side. Below the child and sac was the uterus firmly adherent to the peritoneum and the cicatrix of the former operation: on their right lay a large portion of the placenta extending behind the right horn of the uterus. On exposing all these parts, the greater portion of the posterior wall of the uterus seemed to be deficient, its place being occupied by the membranous sac in which the child and its appendages were placed. The sac and the abdomen both contained a large quantity of blood.

"The posterior wall of the uterus, as well as the left superior angle of its anterior part, and the left Fallopian tube and ovary, were lost; the wall of the

remaining portion was of a firm consistence, and nearly an inch thick; and it had attached to its border the strong vascular membranous sac which, as already described, lay loosely over the child, and which had formed the sac which had been ruptured before the woman's death. In the remaining portion of the cavity of the uterus there was still a portion of the placenta; the cervix was firm, very broad, and an inch and a half long: its canal was broad enough to admit a staff an inch wide and three lines thick." (p. 81.)

The author thinks (and probably with truth) that this cannot be regarded as, in the first instance, a case of completely extra-uterine fœtation, and for these reasons:

"Some of the bones of the fœtus were discharged through the vagina; the cavity from which in the operation the skeleton was removed, descended, funnel-like, into the pelvis: before the removal of the first fœtus, an instrument introduced into the uterus struck against a firm body, which was afterwards found to be the fœtal spine; after the operation pus as well as fæces passed through both the vagina and the external wound; and after death a sac was found containing all the products of conception, and communicating with, or rather, partially formed by, the still remaining portion of the uterus, whose cavity had also, without doubt, served for the reservoir of the former lengthened pregnancy.

"Hence it seems to follow," the author adds in explanation, "that the first pregnancy was completely intra-uterine; that this uterus, at the due time for delivery, underwent a partial weakening, and that the efforts of contraction produced, not delivery, but a *rupture*, the extent of which was not sufficient to permit the fœtus to pass wholly into the abdomen; the body remained in the uterus while the head passed probably into or through the wound. By the consequent inflammation . . . . . a covering was formed which filled the place of the destroyed part of the wall of the uterus, and which, after becoming adherent to the intestines, formed a communication with them by ulceration. The removal of the remains of the fœtus was followed by a contraction of the rest of the uterus. . . . . Then a fresh pregnancy took place through the uninjured right ovary and Fallopian tube, and the development of the fœtus was completed in the uterus; but the distension of the walls produced a fresh rent. The efforts at delivery were fatal: the first contraction in the healthy part of the walls of the uterus soon overcame the resistance of the slightly organized part, filling up the lost wall, and produced the rupture which was followed by death." (p. 82.)

V. *On Congenital Closure of the Intestinal Canal and its Treatment, by J. J. F. La Cave.* In this paper there is detailed a good case of recovery from that defect after puncture of the anus and the use of bougies, and a rather large canula from time to time introduced into the rectum.

The account we have given of the contents of this volume is sufficient to prove that, though they be few and brief, the Transactions of the Medico-Chirurgical Society of Amsterdam have a merit not inferior to that of the publications of any medical society in Europe.

ART. XVIII.

1. *Advice to the Deaf. The present State of Aural Surgery, &c.* By JOHN HARRISON CURTIS, Esq.—*London*, 1841.
2. *The Cephaloscope, and its uses in the Discrimination of the Normal and Abnormal Sounds in the Organ of Hearing, &c.* By J. H. CURTIS, Esq.—*London*, 1842.
3. *Deafness successfully treated through the passages leading from the Throat to the Ear, &c.* By J. YEARSLEY, M.R.C.S.—*London*, 1839.
4. *Improved Methods of treating Diseases of the Ear, &c.* By J. YEARSLEY, M.R.C.S.—*London*, 1840.
5. *An Outline of the principal Diseases of the Ear and their proper Treatment, &c.* By J. YEARSLEY, &c.—*London*, 1841.
6. *On Deafness from Morbid Conditions of the Mucous Membrane of the Stomach, Throat, and Ear, &c.* By J. YEARSLEY, &c.—*London*, 1842.

A sense of duty to our readers has induced us to peruse the publications whose titles we have just transcribed; and we believe that the very character of these titles is sufficient to indicate what our painful task has enabled us to declare positively, that the works to which they belong are not calculated for the perusal of the professional but of the general reader. They are, indeed striking illustrations of that unbounded and irrepressible philanthropy which has so generally distinguished the professors who have taken the ear and its maladies under their special protection; every page teeming with unreserved disclosures of the benefits conferred by the authors on the afflicted, and no concealment being made as to the place where and the means how those still in affliction may obtain relief. We had long beheld with astonishment the efforts made in this patriotic cause by Mr. Curtis; and we confess, we had deemed him not only unrivalled but unrivallable, seeing he had consecrated to it no less than SIXTEEN publications (the list is before us) previously to the appearance of the two at the head of this notice. But when we recollect that full five and twenty years have been given by Mr. Curtis to those labours of love, (*Cephaloscope*, p. 100,) and that Mr. Yearsley has produced the four works above enumerated, besides one recently reviewed by us on stammering—all within little more than three years, we must confess that Mr. Curtis seems at last to have met his match, both in the fervour of his philanthropy and the fertility of his resources. We have even some doubts whether Mr. Yearsley has not already achieved a wider fame and a higher glory than Mr. Curtis, if we may judge from the testimonials which he has kindly appended to his works. In one of these now before us, we have two pages of unmixed eulogy of Mr. Yearsley, his books, and his practice, from half the newspapers in the United Kingdom, comprehending such unquestionable authorities as the Times, Examiner, Age, Dublin Mail, Western Times, Salisbury Herald, Old England, Dorset Chronicle, Bath Herald, Morning Chronicle, Atlas, Weekly Chronicle, Morning Herald, Gloucester Journal, Exeter Post, Wilts Herald, Statesman, Brighton Guardian, Worcester Journal, Morning Post, Felix Farley, Bucks Herald, &c. It will be seen that there are no literary, medical, or scientific journals in this list;

a circumstance which, in the case of the medical press at least, is satisfactorily explained in regard to Mr. Curtis, (and no doubt in regard to Mr. Yearsley also,) by "the petty jealousies and rivalries of some of the members of the medical profession," and by "the attacks to which he has been subjected by his less fortunate brethren." (Ceph. pp. 101-2.) This is the old melancholy story, verified since the beginning of time, of Envy pursuing Merit as its shadow; another example of the "assidua eminentis fortunæ invidia;" another "modern instance" how

"Invidus alterius rebus macrescit opimis."

But we hope our present notice will be considered by Mr. Yearsley and Mr. Curtis as some amends for the cruel silence of the medical press.

It is a singular and, indeed, unaccountable circumstance, that, notwithstanding this identity of patriotic zeal in these two benevolent individuals, and this community of suffering from the neglect or malignity of an ungrateful profession, there should exist anything like enmity between themselves. But such is the melancholy fact! Men of more tumid livers than ourselves, might rejoice at this; the philosophic enquirer might explain the fact on the principle that each had the best possible means of judging of the other's motives and pretensions: we, in our innocence, contemplate it with wonder, and deplore it in silence. Mr. Yearsley is a great operator; he achieves miracles with his knife, his scissors, his catheter, and his air-pump, and the world know and appreciate his doings. Mr. Curtis is a man of milder mood; he deprecates such bloody deeds; he even shudders at Mr. Yearsley's gentle irrigations of the Eustachian tubes.

"Bold operations," says this tender-hearted man, "are often undertaken by men least qualified to conduct them with success, by way of speculation, as it were; hoping if, in spite of their incapacity, the matter should terminate well, to gain credit, practice, and wealth, by means of their good fortune. The public having begun to entertain correct opinions as to the real merits of catheterism, those who had profited by the vogue in which that operation was held, finding themselves under the necessity of providing a substitute for this fast-failing source of revenue, set up a great cry about the prevalence of throat-deafness, and about some totally new, and of course completely successful, operation for its cure, consisting of cutting away the uvula and tonsils; and it appears from the statement of one of these gentlemen, that a considerable number of persons were hopeful enough to submit to this operation, which had not even the merit of novelty. ..... Owing to the vigorous exposure made of the futility of this piece of originality, I believe it has not very extensively imposed upon the public; and therefore, as this, like most other supposed new remedies, is susceptible of an infinite number of applications, it was suddenly discovered to be an unfailing cure for stammering." (Advice, pp. 34-5.)

"A great outcry," says the more heroic operator of Sackville Street, "has been raised by aurists of the old school (for so I must call them) against all kinds of surgical operations in the treatment of deafness, and the fears of the public have been excited by the false statements and exaggerated language employed by these sticklers for acoustic oils, acrid ointments, pink, blue, and yellow, and irritating injections, which, according to my own experience, is worse than useless. But ignorant as these persons appear to be of any scientific practice of their profession, they are nevertheless self-witted enough to foresee, in the more general acknowledgment and adoption of operative measures, the rapid downfal and extinction of their own absurd and inefficient treatment. The anathemas promulgated by these antiquated aurists, in their daily advertisements, forcibly remind one of the scarecrow in the cornfield. In time the public,

like the birds, will become sensible of the deception practised upon them." (On Deafness, pp. 53-4.)

Antiquated aurists! "This was the most unkindest cut of all!" And from a brother too! "*Et tu, Brute!*" It is well for Mr. Curtis that the same retrospect which discloses his antiquity reveals an approving conscience.

"Twenty-five years," he says, with just pride, "have elapsed since I commenced this line of practice; and I have every reason to be satisfied with what I have accomplished in that period. ..... I have been followed by many persons of talent not only in this country, but on the Continent, both by regular and *irregular* members of the profession," &c. (Cephaloscope, p. 100.)

And, after such provocation, we may surely pardon even a philosopher if he occasionally exhibits a little warmth, or even wings slily an envenomed arrow at his traducers.

"The interference of the legislature," he significantly says, "is also required to prevent the intrusion of any not duly qualified persons into this branch of medical practice; as well on account of the serious evils their ignorance may occasion to those who come under their treatment, as of the discouragement which they present to competent persons from entering into the same profession." (Advice, p. 56.)

But, alas, even envenomed arrows can be returned.

"Never," says Mr. Yearsley, M.R.C.S., "never consult an aurist who is not an educated and *diplomatised* surgeon!" (Outline, p. 62.) .... "It is too well known," he adds, in another place, "that the attention of such people is directed only to the discovery of the most successful method of *imposing on public credulity*. Indeed, a blind empiricism has, *up to this time*, characterized the *soi-disant* aurist; and I would as soon rely on the old woman's nostrum as on his." (Deafness, &c., p. 3.)

Matchless pair! What rivalry in well-doing! What tender care for the lieges! What regard for education! What devotedness to science! What horror of quackery!

..... Arcades ambo,
Et cantare pares et respondere parati.

It would be to join with his enemies in the work of depreciation, if we closed this notice without some special reference to Mr. Curtis's newest book, the *Cephaloscope*. This is the name of an instrument invented by Mr. Curtis for exploring the ear by auscultation. It is simply a stethoscope terminated by a hollow bowl of sufficient size to inclose the whole of the external ear. Mr. Curtis derives wonderful information from the use of this instrument. "If the nostril," he says, "on the opposite side is closed by a finger covered with a handkerchief, whilst the patient inspires forcibly through the other, *the rushing of the air into the cavity of the tympanum* will be very evident, if the tube [Eustachian] is perfect." (p. 71.) We venture to say, that neither Mr. Wharton Jones nor Mr. Toynbee is cognisant of this singular phenomenon of the spontaneous rushing of air into a shut cavity without any external force; but this comes of the non-concentration of pursuits on one organ. They study the pathology of the ear as a branch of general surgical science—but what of that?

"It is only," says Mr. Curtis, "by a close and undivided attention to any one branch of the medical sciences that we can hope to attain eminence, and to

be possessed of that skill by which we may benefit our suffering fellow-creatures, and add to the store, at present far too scanty, of medical knowledge." (Cephaloscope, p. 99.)

And these are not words of course: no, Mr. Curtis has stamped them with an "eternal blazon" of truth, and hallowed them by the most heroic self-sacrifice. "That I may be enabled," he says, "to devote my time and opportunities more exclusively to that interesting subject,..... I have resolved to abandon the study and treatment of the diseases of the eye, and restrict myself to aural pathology." (*Ib.*) Unheard-of magnanimity! It is, no doubt, for want of this "exclusive devotion" that we have found it impossible to make the bowl of the new instrument to fit the inequalities of surface in the aural region so as to exclude the access of the air—a circumstance, as all auscultators know, essential to the appreciation of stethoscopic phenomena. Unquestionably the Fellows of the Royal Society must have met with no such difficulty, else they never would have conferred on its inventor a mark of honour we believe unexampled in the annals of that society. "I have presented the instrument," says Mr. Curtis, "to the Royal and several other learned societies, *which have accorded it their approbation*, and returned me their thanks." (Cephaloscope, p. 88.) But possibly these learned societies had in view, in their award, some of Mr. Curtis's other admirable inventions; such as his *musoton*, an instrument whereby he instantaneously "draws out and restores to its natural condition" the membrana tympani when morbidly "concavo-convex in an improper sense;" or, more probably, his *acoustic chair*, which is certainly one of the most astonishing inventions in this wonder-working age. We regret that our limits will only permit us to notice one or two of the important public services which this marvellous chair is capable of rendering to society; but we declare that if, after reading these announcements, brief as they are—and we shall give them in the author's own words—Sir Robert Peel should hesitate to appoint Mr. Curtis not merely Aurist to the Queen, but Auscultator-General to the Cabinet and the Horse-Guards, we shall withdraw such confidence in his government as we have hitherto given it.

"Some years since I invented an acoustic chair, by means of which, with its connecting pipes, a communication could be sent from Downing Street or the Horse Guards to the Mansion House in a minute and a half, and to every police or fire-brigade station in the metropolis in the course of a short time; so that necessary intelligence, in case of fire or other calamity, could be conveyed with surprising rapidity..... My acoustic chair is so constructed, that, by means of additional tubes, &c., the person seated in it may hear distinctly, while sitting perfectly at ease, whatever transpires in any apartment from which the pipes are carried to the chair..... This invention is further valuable, and superior to all other similar contrivances, as it requires no trouble or skill in the use of it, and is so perfectly simple in its application, that a child may employ it with as much facility and as effectually as an adult. It is, moreover, a very comfortable and elegant piece of furniture..... By means of tubes of sufficient length, this chair might be made to convey intelligence from St. James's to the Houses of Lords and Commons, and even from London to the Queen at Windsor." (Cephaloscope, pp. 47-8, 50.)

Professor Wheatstone's magnetic telegraph is nothing to this: we are surprised that the railway companies should not have given the preference to the acoustic chair. Is it yet too late?

PART SECOND.

Bibliographical Notices.

ART. I.—*Report of the Poor Law Commissioners on Medical Charities in Ireland.—Dublin*, 1841. 8vo, pp. 167.

THIS Report most fully illustrates the urgent necessity for an immediate reform of the medical charities of Ireland, and the scandalous abuses which at present exist in the constitution and administration of them. The enquiry extended over fifty-three unions, consisting of a population of 3,228,580, and occupying the cities and most populous towns of Ireland.

There are three kinds of institutions for affording medical relief to the sick poor; these are Dispensaries, Fever Hospitals, and Infirmaries. Dispensaries, which in 1839, amounted (in the whole of Ireland) to 615, are supported partly by subscriptions, partly by county grants and a portion of the fines imposed at petty sessions. The amount from the former source (subscriptions) was, in 1839, £34,604, for the whole island; from the latter, £34,080.

The Report proves a variety of the grossest defects and abuses connected with Dispensaries; some of which relate to the modes of support, the distribution or allocation, and the management of these charities; others, to the manner in which the medical officers are appointed and in which they perform their duties. As regards the former class of evils, it is shown that many large landed proprietors and wealthy persons subscribe nothing to the support of Dispensaries; that others, who do subscribe, make it a condition that all their tenants indiscriminately shall receive gratuitous medical relief, although many among them may be perfectly competent to pay for the same; that, in other cases, farmers, possessing 200 acres of land, and otherwise in the most easy or even affluent circumstances, obtain gratuitous medical attendance for themselves and families; and on this condition alone are their pitifully mean and meager subscriptions paid up. A twofold evil arises from the above state of things: while the rich tenantry of a landlord who subscribes, receive gratuitously that medical aid which they are well able to pay for, the poor tenantry of a landlord who contributes nothing, are often debarred from that relief to which they are entitled according to every principle of humanity as well as to the original design and the actual chartered provisions of all these charities, in which it is expressly laid down that the destitute sick shall be the only participants of their advantages. (Report, pp. 3, 4.)

Then, as regards the distribution of Dispensaries, and their proportion to the population of the respective districts in which they are placed, the greatest possible inequality prevails. While in the county of Dublin there is one dispensary to 6,286 inhabitants, in the county of Down there is only one to 23,486 persons. The disproportion seems sometimes to be

still greater, for at p. 9, mention is made of "a poor tract, standing equally or more in need of relief," where "there is only one (dispensary) to a population of 33,000." It is also shown that the establishment of many dispensaries is owing to views of private interest on the part of medical officers and their friends: that these charities are often most inconveniently situated, being far removed from the more densely-peopled part of the districts, the medical wants of which they profess to supply.

As regards the modes of managing dispensaries and the way in which the medical officers, in many instances, discharge their duties, deficiencies and irregularities of the most serious sort prevail. In some cases monthly or quarterly meetings of the committees of management, or of the subscribers, are held, for the purpose of examining into the administration and expenditure; but in other cases no such meetings are ever held, and the treasurer and the medical officer (the former of whom trusts greatly or implicitly to the report of the latter) are the sole managing authority. Such a state of matters obviously paves the way to the greatest abuses and neglect.

With respect to the medical officers in many of these institutions, and the manner in which they execute their important trust, the Report furnishes a lamentable picture. In one instance a dispensary, supported by contributions, and to which the presenting authorities grant the county funds, has for its officer an individual who has no legal qualification as physician, surgeon, or apothecary (p. 3.) The following are a sample of the imperfections existing and tolerated under the present system:

"28. The medical officer does not practise midwifery, although his district is remote from the residence of any practising accoucheur. He is ignorant, whether, during 20 years, any injury has arisen from his non-acquaintance with this branch of his profession.

"29. The attending physician states, that he visits a certain number of cases in the course of the year; usually pays but one visit to each, no matter what the disease may be; even although it were fever of a bad typhoid character, he would deem a second visit rarely necessary.

"30. The medical attendant partly resides, and has a dispensary, in one county; he attends another once a week, at a distance of eight miles, in an adjoining county; his family reside in a third county, eight or nine miles further off. He is unable to say if fever has prevailed to any extent in any part of his extensive district, except in that which is near to the first-named dispensary, contiguous to which he holds a large farm.

"31. The medical officer of the institution is non-resident, and the duties, from this and other causes, are not performed satisfactorily. Certain influential persons establish a second dispensary in the same district, and appoint another medical man to attend it, who is also non-resident. Thus a district which stands in need of, and could well support one resident medical practitioner, is left without any, and subject to the inconveniences arising from this defective arrangement.

"32. The subscribers are the personal friends of the medical officer, who, although he keeps a registry of cases, yet gives the treasurer a return of the number stated by him to have been relieved; which return is laid before the presenting sessions and grand jury, and leads to the supposition that the relief afforded far exceeds that which is really given." (Report, pp. 8, 9.)

In various parts of the Report it is shown that the stocks of medicines at not a few of the dispensaries and hospitals examined by the commissioners, were of the most wretched quality and preparation, although, no doubt, this circumstance was, in some instances, to be attributed to the

inadequate remuneration allowed to the medical officer. And here we may notice that, while in some cases the salaries of the medical officers appear sufficient for the amount of duty performed by them, in others the sums allowed these gentlemen are utterly inadequate as fair compensation for their toil.

Fever Hospitals and Infirmaries. Many of the objections just now stated to the existing constitution and arrangements of the dispensaries of Ireland, apply equally to the Fever Hospitals and Infirmaries : such as the unfeeling neglect of many large landed proprietors to subscribe to them; the inconveniences arising from these charities not being eligibly allocated; their inadequacy, in respect of number and extent of accommodation, to the wants of the sick poor; the occasional non-residence of the medical officer, as his being at an unsuitable distance; the careless and inefficient manner in which the duties devolving on the medical officers are occasionally discharged. On all these the Report furnishes full and, as it appears to us, very correct and impartial information; and we recommend any of our readers particularly interested in the enquiry to the document itself.

The Report advocates the new arrangement and more ample distribution of the charities of Ireland, not only as a measure of obvious humanity, but as a powerful means of checking pauperism; since, by the fact of heads of families, &c. being disabled by disease, protracted much beyond the time it would last under efficient medical treatment, all dependent on these heads of families are reduced to indigence; and thus, in addition to the evil now stated, large masses of the Irish community are predisposed to pestilential disease.

The remedial measures (p. 24) suggested by the commissioners are confined to dispensaries and fever hospitals, it being already provided by act of parliament, that infirmaries "may be supported (p. 18) by county and parliamentary funds, altogether irrespective of any subscriptions or donations." It is proposed that dispensaries and fever hospitals be provided for out of the poor rates, in order, at once, to ensure their sufficient maintenance, and equalize the burden of supporting them by throwing it on all members of the community : that each dispensary and fever hospital district be accurately defined; that the direction and management be of a popular character, in order to give the public an interest in the institutions. The heads of a proposed bill for carrying out these and other important objects connected with the due maintenance and administration of the charities of Ireland, are given at p. 33, and seem to include all that is necessary for attaining in the amplest manner that contemplated end.

We have only to add, that the conviction appears to be very general in Ireland, that the only efficient mode of securing due medical relief to the sick poor of the country, is by connecting the fever hospitals and dispensaries with the poor rates.

A variety of statistical tables and reports fill up the volume.

Art. II.—*Dissertationis de Ulcere Ventriculi Perforante*, Particula Prior, Quam pro licentiâ, &c. Eduardus A. Dahlerup.—*Havniæ*, 1840. 12mo, pp. 77.

Dissertation on the Perforating Ulcer of the Stomach. Part I. By Edward A. Dahlerup.—*Copenhagen*, 1840.

We have here a very well-digested and complete dissertation on the morbid anatomy of this interesting disease of the stomach, of which the author has added eighteen cases to those scattered through the various works of Baillie, Cruveilhier, Abercrombie, Rokitanski, and others. Few diseases have more constant characters. The patient is generally one who has till within a short time of the fatal seizure been deemed thoroughly healthy, or who has only suffered from slight dyspepsia. But suddenly the well-known signs of acute peritonitis from perforation come on, and in the space of from one to four or five days terminate fatally. After death the disease is found to have consisted of an ulcer of the stomach, round or oval in form, from one fourth to one half of an inch in its greatest diameter, with smooth clean-cut edges, as if a portion of the membrane had been *punched* out, and which has gradually made its way from within outwards, till, penetrating the peritoneal coat, or causing it to slough, it has permitted the fatal effusion. In general there is no other disease of the stomach except a slight thickening and induration of the membranes immediately surrounding the ulcer, with which there is also not unfrequently associated such adhesion of the stomach to the adjacent viscera, as for a time or permanently prevents the effusion from taking place.

Such are its general characters; the summary of the author affords some interesting results from the comparison of the numerous cases which he has collated, in regard to the less obvious features of the disease. With respect to the situation of the ulcers, they are almost invariably seated in or near the lesser arch, (in 79 cases Rokitanski found but one with such an ulcer in the fundus,) they are rather more frequent on the posterior than on the anterior surface, and most commonly lie nearer to the cardia than to the pylorus. Much more rarely ulcers of similar form and characters are found in the duodenum. In the great majority of cases they occur singly: in some (in 12 for example of the 79 examined by Rokitanski) there were two, in a few three, and in yet fewer more than three. They rarely equal, and still more rarely surpass, an inch in their greatest diameter; and very rarely deviate from the regular circular or oval form, except the ulcer have by some accident been enabled to spread more widely than usual before perforating. The thickening and hardness which are generally found surrounding them result from deposition in the cellular coats of the stomach, the muscular fibres being commonly traceable unaltered to the very margin of the ulcer, and this hardening is effected by the addition of a homogeneous uniform substance altogether different from that found in carcinoma. The margins of the perforation are almost always even and abrupt, or gradually and smoothly shelving from within outwards: they are very rarely softened or discoloured, but sometimes exhibit an appearance as if the ulcer had made progress in definite stages, destroying one coat, then staying, then destroying a less extent of the next coat, and so on. Before perforation the

base of the ulcer is generally firm and smooth, more rarely rugged, vascular, and softened; when it reaches the peritoneum it causes it to slough, and sometimes when the perforation takes place, the slough not being swept clean away, is found adhering to one of the margins of the ulcer.

The cause, the origin, and the early progress of this disease, are almost unknown. Its termination is in the large majority of cases fatal, by the effusion into the peritoneum, but there is sufficient evidence that in some instances the ulcers have cicatrized. Such was probably the case of Beclard himself. Cruveilhier and Rokitanski have often found cicatrices in the stomach, of such a form as could leave little doubt they had been preceded by ulcers of this kind.

We have ourselves found such cicatrices in three instances. They presented all the ordinary characters of the cicatrix of a deep circular ulcer of the skin; and, indeed, the whole early progress of this disease is exactly analogous to that of the ordinary circular deep ulcer of the extremities. It derives all its importance from its position, which is such, that after having made a certain extent of progress, it leads to an accident, the effusion of the contents of the stomach, which brings about a result such as the ulceration alone would perhaps never have induced.

The disease has considerable interest in a medico-legal point of view. In two cases that we examined there was some suspicion of poison having been administered, for the patients were destroyed within twenty-four hours of having eaten hearty meals, by an illness which commenced shortly after they had finished eating. The form of the ulcer, the firmness of its borders, the evenness of its edges, the healthiness and absence of inflammation in the rest of the stomach, were in these cases, as they probably will be in all, sufficient evidence that the disease was chronic, and had only an accidental connexion with the taking of food. Some very interesting remarks on the medico-legal relations of this affection are contained in a paper by Mr. Alfred Taylor, in the Guy's Hospital Reports for 1839.

ART. III.—*A Treatise on the Structure, Economy, and Diseases of the Ear.* By GEORGE PILCHER, Lecturer on Anatomy and Surgery, &c. Second Edition.—*London*, 1842. 8vo, pp. 334.

THE first edition of this work, a prize essay, was published in 1838, and gave a general view of the Anatomy, Physiology, and Diseases of the Ear. The author, however, passed over, in a few words, that class of diseases of the nature of which the profession has been hitherto quite ignorant, which, in reality, form the very great majority of the cases of deafness, and for which no means of relief have as yet been pointed out. In the edition before us, the author has added another coloured plate of ears with polypi, which, like all the others, is poor in design and execution, and appears to us be entirely useless to the surgeon; he has corrected some of the inaccuracies which we formely pointed out (British and Foreign Medical Review, vol. viii. p. 75), and he has added ten pages by way of a "conclusion," but in which we regret to say he has not given a single practical observation, although in the time which has elapsed between the two editions, he seems to have had many opportunities of studying this important and interesting subject. The following extract from the "conclusion" shows that the author agrees with the profession generally in considering that, with our present knowledge, the

majority of the diseases of the ear is incurable. At least, we presume that this is his meaning; although, from the almost unexampled inaccuracy of the language, it is not easy to say positively what the meaning is.

"The allusion in this summary to the extent of surgical aid in acquired causes of deafness, though brief, is sufficient to point to the fact, that in the present state of knowledge it is, to a distressing degree, unavailable, and that to a certain extent it will ever remain so; yet the daily advance of science justifies the hope that more may be achieved in this department also for suffering humanity." (p. 382.)

It will be naturally enquired, considering "the daily advance of science," why Mr. Pilcher has not added a single fact to this work since 1838, which can aid in the relief of "suffering humanity?" We very much regret that he should have been induced to publish another edition of his work without having done so, and he appears to us to be particularly open to censure for making no reference to the important researches of Mr. Wharton Jones and Mr. Joseph Toynbee; the former published in the Cyclopædia of Surgery, the latter in the twenty-fourth volume of the Medico-Chirurgical Transactions. These must be considered as the first attempts to discover the causes of the diseases of the ear; and the numerous dissections of Mr. Toynbee point out the most frequent seat of disease. How long will it be before surgeons cease to produce works which can be of no benefit either to the profession or to the public? In conclusion, we must, in justice to ourselves and to our readers, declare that this work is neither creditable to the author nor to British surgery; and that it still leaves the domain of aural pathology and therapeutics open to the unrestrained inroads of the charlatans who have so long disgraced it.

Art. IV.—*A Practical Treatise on Auscultation.* By M. Barth, M.D., and H. Roger, M.D. Translated [from the French], with Notes, by P. Newbigging, M.D. *Edinburgh*, 1842.—Small 8vo, pp. 398.

We regard the original treatise of which this is a translation as decidedly the best that has yet appeared on the subject of Auscultation. Its great defect to the practical student is its passing entirely over the subject of percussion. We hope, on a future occasion, to notice the work more in detail; our object at present is to point out to readers ignorant of the French language, that they have now an opportunity of studying the treatise of MM. Barth and Roger in English—we wish we could add, *in good English*, but this we certainly cannot do. Although the translator justly condemns, in his preface, "the practice of introducing French phraseology into English writing, which has been long prevalent," he is himself one of the greatest sinners in this way we have met with for a long time. There is scarcely a page in the book which could pass with an English scholar as a sample of his genuine mother-tongue; so frequent is the recurrence of words, phrases, and idioms characteristically French. We cannot say that, on this account, the translation is unfaithful or the language at all unintelligible; but we say that the work is thereby rendered unpleasant to the reader of any taste, and is far from reflecting the credit on the translator which a version at once faithful and elegant could not fail to do.

Art. V.—*Nouveau Manuel d'Anatomie descriptive et raisonnée, avec un Atlas de* 34 *planches noires, coloriées et decoupées.* Par C. Crommelinck, Docteur en Médecine, en Chirurgie et en l'art des Accouchemens à Bruges, &c.—*Bruxelles*, 1841. 8vo, pp. 436.

A New Manual of Anatomy, descriptive and analytical. With an Atlas of 34 *Plates.* By C. Crommelinck, Doctor of Medicine, Surgery, and Midwifery at Bruges, &c.—*Brussels*, 1841.

In the ordinary way of teaching, remarks M. Broc,* the necessity of gradually introducing the novice into the temple of science is never thought of. The professor being there himself supposes others there also—he does not first call attention to a general view of the whole at some distance, so as to familiarize the pupil with the larger masses, and thus prepare him to comprehend the minute details. How far M. Broc is justified in the above statement as regards teachers of anatomy, against whom it is more particularly directed, we stop not to enquire, but proceed to state that his plan consists in first giving, by means of comparison, an idea of the disposition of all the apparatuses and of the mode in which they perform their functions; he then passes to the description of the individual apparatuses and functions, but in a very general way. After this first section of his first part, he proceeds to the second section, in which he treats of the intellectual functions. Passing now to the second part, he considers the organs with reference to their principal dispositions. Lastly in the third part he gives a more minute description of the organs.

We believe M. Broc is a very popular and successful teacher—*prima facie* evidence that his plan possesses many advantages. The work of M. Crommelinck is so close a copy of that of M. Broc, both in plan and matter, that it is not necessary to say much of it. We may remark however, that in looking over it we have found great deficiencies in all that relates to the finer points of anatomy—all that in fact constitutes anatomy a science.

Art. VI.—*The Means of Promoting and Preserving Health.* By T. Hodgkin, M.D. Second Edition, with additions.—*London*, 1841. 8vo, pp. 480.

In the Second Number of this Journal, for April, 1836, we noticed at considerable length the first edition of this little work, and bestowed on it the high commendation which its merits claimed. The present edition, which has been long wanted, is greatly improved by valuable and extensive additions to each lecture. Many of these additions have been prepared with a less exclusive view to the working classes of society than the original lectures, and hence the book, in its present form, will be found better calculated for general perusal, and consequently be of more extensive usefulness. To all classes of readers we earnestly recommend this little volume, as fraught with information which it behoves every well-wisher of his fellow-men and of his country to be acquainted with.

* Introduction a l'Etude de l'Anatomie, ou l'Homme consideré en grand sous le rapport des Appareils et des Fonctions. Paris, 1837.

ART. VII.—1. *An Exposition of the Pathology of Hysteria: elucidated by a reference to the Origin, &c. of Hysterical Amaurosis.* By EDWARD OCTAVIUS HOCKEN, M.D.—*London*, 1842. 8vo, pp. 32.

2. *An Essay on the Influence of Constitution in the Production of Disease.* By EDWARD OCTAVIUS HOCKEN, M.D.—*London*, 1841. 8vo, pp. 64.

OUR principal reason for noticing these works of Dr. Hocken is to afford ourselves an opportunity of advising the author—who appears to have talent, and is doubtless young—to be more chary, for the future, of printing his lucubrations, unless they contain a considerably greater share of important or novel matter than the present ones can lay claim to. In the "Pathology of Hysteria," we do not find a single observation with which every physician is not already familiar, and which we have not met with, times out of number, in other publications. What conceivable inducement can any one have to consult the small and trivial pamphlet of Dr. Hocken, when he can find the same subject more methodically, thoroughly, amply, and efficiently treated of elsewhere? Does Dr. Hocken mean to call the cases given at pp. 14 and 16 hysteric? The former seems most probably to have been of the nature assigned by Mr. Tyrrell; and the latter was most distinctly *not* of the nature which Dr. Hocken would imply.

The "Essay on the Influence of Constitution in the Production of Disease" is still more unsatisfactory than its twin brother, being little else than vague and inaccurate declamation—inaccurate both as regards style and the statement of clinical facts. Of the truth of this remark a single quotation will, we are persuaded, satisfy the reader:

"Soon, however, the disease (Hydrophobia) developes itself, and, then, its characteristic sign is fully formed, he cannot endure the sight or sound of liquids, they produce horrible convulsions, the muscles of deglutition are hurried into spasmodic action, and the feeling of suffocation is intolerable. And not only do liquids thus agitate the death-claimed patient, but even the bare resemblance of sound or look, a looking-glass, the motion of earthenware, or even the zephyr's gentle play, call forth the anger of the nervous system of the patient, and then in a few short days kill him outright by their intensity, either during one of those fierce struggles of the nervous system for mastery, or wear him out by pure exhaustion, sinking, and collapse." (pp. 63-4.)

Dr. Hocken must be aware that many deaths from hydrophobia are recorded, in which, during the whole course of the disease, the symptom which gives its name to the malady (water-fear) was never manifested.

ART. VIII.—*The Retrospective Address delivered at the Ninth Anniversary Meeting of the Provincial Medical and Surgical Association, held at York, August 4th and 5th*, 1841. By R. J. N. STREETEN, M.D., Physician to the Worcester Dispensary.—*Worcester*, 1841. 8vo, pp. 104.

THIS excellent address is well worth the attention of the profession as containing, in a very condensed form, all the improvements made in the medical sciences during the preceding twelve months. It shows, at once, extensive reading and much good judgment on the part of its author. It is unsusceptible of analysis, and our limited space forbids extract.

Art. IX.—*Elements of Materia Medica and Pharmacy.* By O'Bryan Bellingham, m.d. &c. Edited by Arthur Mitchell, m.d. Part I. —*Dublin*, 1841. 8vo, pp. 302.

The volume before us contains sufficiently full and perspicuous information on all the matters which its title implies. The following is a general statement of the author's plan. First, we have a chemical analysis of the articles of the Materia Medica. The division adopted in regard to the elementary substances (which are, of course, first discussed), is that of non-metallic and metallic; after which, the metallic oxides, the acids, alkalies, and the salts, are successively treated of. Chapter v. is devoted to a consideration of the proximate principles of vegetables, to the modes of analysing and classifying these. Chapter vi. is divided into two parts, of which the first is occupied with the neutral vegetable principles, among which we may enumerate arabin, bassorin, cerasin, amidin, mucin, glutin; in the second part, the intermediate bodies are examined, such as the fixed oils, stearin, resins, alcohol, chlorophyllite. Then follow the vegetable acids and vegetable alkalies. Chapter vii. is taken up with an account of the general nature of pharmaceutical operations. An account, *in abstracto*, of the pharmaceutical preparations, occupies Chapter viii. Chapters ix. x. and xi. are respectively devoted to the *modus operandi* of medicines, to the circumstances which modify the general actions of medicines, and to the modes of administering and combining these; and Chapter xii. which concludes this volume and the first part of the work, gives the classification of the Materia Medica, first according to the natural-historical, and secondly, according to the therapeutic arrangement.

Art. X.—*Natural History of Man.* By J. C. Prichard, m.d. f.r.s. m.r.i.a. &c. &c. Parts I-II-III.—*London*, 1842. 8vo, pp. 160.

All our readers must be familiar with the great classical work of Dr. Prichard, on the Physical History of Mankind, which we have had occasion, more than once, to notice in our pages, with unmixed praise. That work is for men of science, and has been received by them as the highest authority on the subjects of which it treats. A work of a somewhat similar kind, but fitted for the general reader, was still wanting in the English language; and it is to supply this defect that the present treatise has been composed. And "in order to render it acceptable and useful to general readers, the author has omitted all anatomical and physiological details that were not absolutely requisite for the setting forth of his principal argument; and such facts of this kind as were indispensable he has stated in the most brief and general manner. The whole work will be comprised in one volume octavo, and will be completed in ten monthly parts. It will contain an account of all the races of men which are distinguished by any remarkable peculiarities; and these peculiarities will be illustrated by a large collection of engravings, taken partly from a series of original portraits and in part selected from the late splendid publications of French, German, Dutch, and Russian voyagers." As far as the work has gone it has entirely fulfilled the promise of the prospectus. We can give it no higher praise than to say, that it is worthy of its author and of his preceding works. We earnestly recommend it to all our readers. The parts hitherto published are beautifully and copiously illustrated with wood-cuts and coloured plates.

On one point we must remonstrate—the *very high price* of the work: and here we expect the publisher and not the author must bear the blame. The work is certainly handsomely got up, and the expense of the plates must be very considerable, but to pay half-a-crown for 48 pages, each not containing more than one half of our own, is much beyond the mark. At the same rate, this Journal, instead of *six*, would cost *thirty* shillings! We think the sale will be greatly circumscribed by this ill-judged dearness.

Art. XI.—*Observations on the Analogy between Ophthalmic and other Diseases, being the substance of a Paper read at King's College, London.* By Charles Vines, m.r.c.s., Surgeon to the Reading Dispensary.—*London*, 1841. 8vo, pp. 32.

It appears from the preface, that it was before the Medical Society of King's College, in January, 1836, this paper was originally read. It is very creditable to the author's talents while yet a student.

Art. XII.—*A Dispensatory, or Commentary on the Pharmacopœias of Great Britain; comprising the Natural History, Description, Chemistry, Pharmacy, Actions, Uses, and Doses of the Articles of the Materia Medica.* By Robert Christison, m.d. f.r.s.e., Professor of Materia Medica in the University of Edinburgh.—*Edinburgh*, 1842. 8vo, pp. 978.

We have recently entered so largely on the subject of Materia Medica and Pharmacy, that we must dismiss, with a mere notice, the valuable volume now before us. We cannot do so, however, without expressing our unqualified praise of its plan and execution. Its plan is considerably different from that of the late Dr. Duncan's Edinburgh Dispensatory, and Dr. Thomson's London Dispensatory, and is a decided improvement on them. "Instead of the subject being divided into several parts, and each topic treated of under several distinct heads, a method which renders consultation troublesome, study perplexing, and frequent repetitions unavoidable,—it has been thought preferable to exhaust every special topic under a single head;"—in a word, the work is strictly alphabetical, and all the preparations of each article is given under the name of this article. In the natural and commercial history of the different drugs we have all the information that is requisite without any superfluous or irrelevant details; and under the head of "Actions and Uses," we have concise yet precise descriptions of the physiological effects and the therapeutic properties of the different remedies. In this department it is easy to recognize the results of the judgment and experience of the practised physician, not the bald repetitions of the mere compiler. The only work that can at all compete in point of excellence with this is Dr. Pereira's most elaborate Materia Medica; and for the mere practitioner, Dr. Christison's deserves the preference, on account of its greater conciseness and readier accessibility in consultation. We accordingly earnestly recommend Dr. Christison's Dispensatory to all our readers as an indispensable companion, not in the Study only, but in the "Surgery" also. We ought to add, that the volume, while "got up" in the very best style, has the great and too-rare merit of being, for its size, remarkably cheap.

PART THIRD.

Selections from the British and Foreign Journals.

I. THE FOREIGN JOURNALS.

ANATOMY AND PHYSIOLOGY.

On the Formation of Contagious Confervæ on Living Frogs.
By Dr. Stilling, of Cassel.

The object of this paper is to prove that the formation of conferva-like tubes on frogs is not to be regarded, as it is by Hannover, as the result of a vegetable contagion growing in the water, but is nothing more than the development of infusoria from ova, which, being most probably derived from external sources, come in contact with an organic substance that is undergoing decomposition, and then become the seats of new vital processes.

The author says he saw the conferva-like tubes just as Hannover [Brit. and For. Med. Rev., vol. IX. p. 550] describes them. The black granules were at first contained within the tubes, but afterwards were extracted from them and adhered in tufts to their exterior. By long and careful observation he saw how, in the tubes which inclosed the granules, all was at first unmoved, but soon, at various intervals within them, rapid currents began to move in them, as if certain parts of a firm gelatinous substance had suddenly become very thinly fluid; and how this fluid made for itself a way through one end of the tube, and flowed out of it. The black granules were moved in various quantity with these currents, and often flowed with them out of the tubes; but the most striking phenomenon was the independent motion of the black granules, of the reality of which, as well as of its difference from the ordinary Brownian-molecular motion, the author and many others repeatedly convinced themselves.

These granules were repeatedly seen to move pretty rapidly in all directions, through certain spaces of the tube, but not commonly through its whole length at once. It appeared as if the contents of the tubes at the parts which contained the moving granules were more fluid than at the parts where the granules lay immoveable, as if imbedded in a denser jelly. A heap of these granules often vibrated very vividly, but still the motions of every individual granule could be observed separately from those of the rest, even though its movements were not considerable. Often too the granules were seen like little infusory animalcules moving from one wall of the conferva-like tube to the other, upwards or downwards, in short, in all possible directions through an extent of between one and two lines; and, although no locomotive organs could be seen, yet their motions were quite regular, and just such as would be produced by a regular motor apparatus, like that of mites. Nor were they confined to the interior of the tubes; they were seen to be still actively continued in portions of the jelly-like fluid that had been forced out of the tubes.

Further examination proved that in every conferva-like tube whose contents were in part evacuated, there was an innumerable multitude of small, straight, hair-like, semi-transparent, linear animalcules, apparently about a line and a

half long, which presented an uncommonly vivid vibratory motion, and which usually lay with one end (the head) against the wall of the tube, and stretched out their bodies and tails at right angles away from it. They seemed, indeed, as if they had bored with their heads into the substance of the tube and derived their nourishment from it, while they were making the rapid vibratory motions with their bodies. They commonly adhered in heaps to one or more spots, or to the greater part of the circumference of a tube, and in the latter case they made it look as if it were beset with the finest, semi-transparent, whitish, needle-like crystals, or as if it were lined with portions of the finest glass-thread a line or two long. Their manifold motions clearly showed that they were living infusory animalcules.

On almost every occasion it was observed that some of the animalcules were swimming about, each in connexion with one of the black granules that are contained in the conferva-like tubes. And this was so often seen that the author does not hesitate to regard the granules as the ova from which the hair-like infusoria are produced; nor to consider that the movements of the former depend on the latter being hatched and forcing their way from their cells, the last stage of the hatching being that in which the animalcule is seen, as just mentioned, moving about with one of the black granules appended to his tail.

But the degree of development hitherto traced out does not yet afford a complete history of these granules and animalcules. If the efflorescence from the frogs' toes, which presents the phenomena just described between the second and fourth days, be examined at a later period, many of the animalcules are found to be grown to three or four times their original size, but they are now bent into a horse-shoe shape, and at both their extremities have dark spots like the original black granules, but depending on the doubling up of their very ends. But at this time also there are yet a greater number of serpent-like infusoria of different sizes moving about, and the number of the original smaller vibrating animalcules is much diminished, or they have altogether disappeared. The author does not hesitate to regard the larger animalcules, which have the shape and rapid tortuous movements of snakes, as the representatives of the more perfect stage of development of the smaller hair-like kind. As soon as they make their appearance nothing but traces can be discovered of the conferva-like tubes; they seem by this time to have been completely broken up.

The author made several experiments on inoculation with these creatures. Small wounds were made on the backs of several salamanders, and into each was put a small quantity of the efflorescence from the frogs' toes, (i. e. from the toes of frogs on which the conferva-like tubes and their animalcular contents had been spontaneously produced after destruction of the lower part of the spinal cord). On the second day the wounds were covered with a whitish substance, which gradually spread; several of the salamanders died and all became sickly. This white substance consisted of conferva-like tubes just like those that had been inserted in the wound; after four or five days it was all thrown off from the wound, complete cicatrization took place, and the animal recovered its health. Dead flies, placed in the same vessels with frogs that had any of this efflorescence on them, soon became covered with it without the aid of inoculation. A toad, into whose wounded back a toe thus affected and cut off a frog's foot was introduced, was found dead next day. On the whole the inoculation was more successful in salamanders than in frogs; among the latter it never succeeded unless they were previously sickly; the matter from dead animals was as efficient as that from the living.

To determine whether the formation of the conferva-like tubes were the result of putrefaction, or whether it were connected with the putrefaction of the blood, or produced from the latter or from the nervous substance, or derived entirely from other sources, the author instituted some further experiments. Dead frogs which had not during life been affected with the peculiar disease, were left to putrefy in water. In many, the conferva-like formation was produced and went through all its stages; in others, no trace of it could be found;

but in all, as soon as the putrefaction had begun, a white granular substance formed in a layer on the surface of the water, which was found to contain the same black granules as were seen in the conferva-like tubes, the same serpent-like animalcules as had been found in the older conferva-like tubes, and the same islands of gelatinous animal matter, with the black granules and vibrating infusoria as had been already constantly seen and described. The same productions were found in films on the water in which frog's blood and nervous substance had been laid, although in neither case was there any production of the conferva-like tubes.

In his summing up the author concludes that the material which has been described as composed of confervæ is really not a vegetable, but an animal exudation taking place from the blood-vessels of a diseased part, in which, from defective nervous influence, or some other cause, the blood has stagnated, or moves very slowly. He cannot account for its taking the form of tubes, nor for some of the other anomalies which it shows in the kind of animals and circumstances in which it chiefly occurs; but, once formed, it constitutes the most favorable nidus for the development of the ova of this particular infusory animalcule; which ova, like those of other infusoria, must be regarded as constantly present among us in great numbers, wanting only an appropriate nidus in which to commence their further growth.

Muller's Archiv. Heft iv. 1841.

On the Development of the Hair. By Dr. GUSTAV SIMON, of Berlin.

THE author's investigations were for the most part made on fœtal pigs. In those that were not more than two inches long, he found, as Heusinger did, that the skin had the appearance of having been sprinkled with fine black dust, or if not so, that it contained white cells of the same form as those from which, in young black or spotted pigs, the dark spots proceeded. These cells, whether black or white, were found to be the embryonic hair-follicles; they lay very obliquely or almost horizontally beneath the surface of the skin, and were somewhat pear-shaped, their smaller ends being next the surface. They were lined by small granules, probably the nuclei of cells, and (in the parts that would have black hairs) by a layer of black pigment in round or star-shaped cells. It was obvious that the hair-follicles are formed in the embryo earlier than the hairs, for in fœtuses so small as these no trace of a hair could be seen.

The first part of a hair that could be discerned was the root, which appeared as a small mass of round, and sometimes black, granules, like the cells of the rete Malpighii, set in the bottom of the follicle. From these cells are formed the shaft of the hair, probably, as Henle supposes, by the elongation and occasional swelling of their nuclei to form the fibres of the cortical substance, and by the gradual elevation of the cells of one set, by others produced after them, to form the cellular medullary substance.

When the hairs have grown to a length greater than that of the containing follicles, they do not at once grow straight out of them, but their ends bend back again so as to form loops, with their arches directed to the surface, and the very point of the hair turned back to the root. Their extrusion is prevented for a time by a thin membrane composed of very fine cells, like those of epithelium, but which is separate from the true epidermis, and must rather be regarded as the fœtal layer of the amnios. As this membrane separates, the hairs make their way out of their follicles, and by the time the fœtus is between eight and twelve inches long, they commonly all project from the skin.

The sebaceous glands attendant upon the hair-follicles are always formed rather later than they, but traces of them are visible before the root of the hair is produced.

Exactly confirmatory observations were made on several fœtal dogs and calves.

Müller's Archiv. Heft iv. 1841.

Description of a hitherto-undescribed Entozoon removed from the Eye of a Horse, through an opening in the Cornea. By Dr. A. Numan, of Utrecht.

Von Nordmann, who wrote in 1832, was acquainted with about seventy species of entozoa, of the families of nematoidea, cystica, and trematoda, which occurred in different parts of the eyes of man and other vertebrata; and since that time several other species have been discovered and described. Many examples of entozoa in the eye of the horse have been published in the various scientific and veterinary journals, and, although it is difficult to determine exactly what species is described in each case, it may be assumed that several species have already been found.

The subject of the present case was a three-year-old mare, which was found by the friend of the author suffering from severe inflammation of one of the eyes, with such an opacity of the cornea that it was with some uncertainty that he thought he could perceive a foreign body floating in the anterior chamber. After reducing the inflammation however, the presence of its cause, some entozoon moving in the eye, and especially active during bright sun-light, was no longer doubtful. This he therefore removed through a section of the lower part of the cornea, similar to that made in the ordinary operation for the extraction of a cataract. No ill consequences ensued from the operation, and in a month after it the mare was well, and had recovered her sight.

The entozoon thus removed was half an inch long, and on an average a line broad. Its body was rounded but flattened, and at tolerably regular distances seemed constricted, as if it consisted of a number of sections or joints like those of the tape-worms or the larvæ of some insects, though with the latter it could not possibly be confounded. The joints were nine in number, the anterior being somewhat longer and broader than the posterior, and the last of all blunt and somewhat clavate. On the third joint from the head, and on its abdominal surface, was a channel-like opening which might, without doubt, be regarded as the ovary connected with ducts, like those of many entozoa, and among them, of the strongylus. From this aperture a fluid was extracted, which, when examined with Schröder van der Kolk's microscope, was found to contain a great number of ova, which measured about $\frac{1}{1500}$th of an inch in length, and from $\frac{1}{20000}$ to $\frac{1}{25000}$th of an inch in thickness. The head was also blunt, and cup-shaped, with a depression in its middle where there were a number of very small, dark, horn-like points, in the midst of which was the oral aperture.

Finding no description of a worm like it in any helminthological work, and believing that it may best be referred to the genus *monostoma*, the author has proposed to call it *monostoma settenii*; its specific distinction being taken from the name of the veterinary surgeon under whose care the case occurred, and by whom the parasite was sent to him.

Tijdschrift voor naturlijke Geschiedenis en Physiologie, 1840. 7de Deel. 4 Stuk.

On a new Account of the Movements of the Bones of the internal Ear, and of the Membrana Tympani. By M. Bonafont.

The author's observations were chiefly made by exposing the muscles, and drawing them gently in the direction of their fibres. By acting thus on the tensor tympani, or internal muscle of the malleus, he saw the handle of that bone drawn inwards and a little forwards, stretching the posterior, and relaxing the anterior, fibres of the tympanum. By similar means he found the direct office of the stapedius muscle to be the drawing of the head of the stapes outwards and a little forwards. By this movement the incus is made to rotate around an imaginary axis, passing horizontally through the angle formed by its branches; and its anterior branches being carried backwards and a little outwards, and its upper branch upwards and a little outwards, the malleus is in its turn moved, so that its head is carried forwards and its handle backwards. By this motion the tympanum is affected in a manner exactly contrary to that which results from the contraction of the tensor tympani, for its anterior fibres are now stretched and its posterior relaxed.

The author denies the muscularity of the laxator tympani, and holds that the whole of the membrane can be made tense only when the two muscles, the tensor tympani and stapedius, act coincidently.

He has invented an instrument for examining the membrana tympani, which he calls a *speculum otique phosactéon*, and he mentions some of the facts which by its means he has observed. Among them he relates this case: "An artilleryman working at the arsenal had heated a large plate of iron, and his comrade, in taking it red-hot from the fire, carried it close by his right ear. He felt at the instant a strong sensation of heat, and a slight crack in the ear, and from that time he has had dullness of hearing, and when he speaks it seems to him as if his voice escaped through his ear, so that he instinctively puts his hand to the side of his head to prevent it. I examined him with my speculum, and distinctly perceived a slight rent at the anterior part of the membrana tympani, with a chronic inflammation of the mucous lining of the external meatus."

Gazette Médicale. Janvier 28, 1842.

Case of complete Anchylosis of the Temporo-maxillary Articulations. By M. PAYAN.

IN examining the body of a man, seventy-five years old, who died in 1835 of Asiatic cholera, M. P. found so complete a union of the temporal and lower jaw-bones, that they seemed to form but one; and the osseous substance which had formed around their articulations, so completely covered them, that the line of separation between them could not be detected. All that could be learned of the patient's history was, that, at five years old, he had a violent blow on the head, after which his jaw became fixed; and that it had continued so ever since, his food having been always taken through a small aperture made by contracting his upper incisor teeth.

Revue Médicale. Novembre, 1841.

Remarkable Monstrosity. By Dr. FRIESE.

THIS child, which lived only half an hour after birth, was eighteen inches long, and weighed six pounds. The external genital organs were wanting: their place was occupied by a fold of skin. The testicles were absent; but behind the abdominal rings were two small membranous vesicles, containing a limpid fluid. There was neither epididymis, vas deferens, nor vesicula seminalis; the urinary bladder was normal; the urethra terminated in cellular tissue below the symphysis pubis. In the right arm, the radius and ulna gradually separated below the elbow-joint, so that at the carpus they were nearly four inches apart. They were covered and connected by a thin, tense, transparent yellowish-white membrane, without any trace of muscles. The os pisiforme was the only bone of the carpus that was present; the hand also was absent; and the whole fore-arm was not unlike a bat's wing.

Casper's Wochenschrift. December 25, 1841.

Account of a Phrenological Visit to the Penitentiary for young Criminals at Paris, made by M. VOISIN, *in Company with a Committee of Members of the Royal Academy of Medicine, on February* 17, 1839.

IN addition to M. Voisin and the committee from the Academy of Medicine, there were present MM. Boullon and Pontignac de Villars, of whom the former was governor of the prison, the latter, secretary. Four hundred young criminals were examined, one by one, by M. Voisin; who, having looked at the form of each one's head, and examined it with his hand, directed him to go to the *right* or the *left*, according as his character or natural endowments appeared to be good or bad. These he subsequently divided into four classes, putting the

worst in the first, the best in the fourth, and arranging in the two intermediate series those who formed a sort of *juste milieu* between the others.

Of the 400 boys originally examined, 254 were selected by M. Voisin as those whose good or evil qualities were most distinctly marked. The fourth, or best class, contained only 25, or one tenth of the whole; while 61 were arranged in the first or worst class. Of the remaining 168, 77 were placed in the third class, 91 in the second, the bad again preponderating.

M. Boullon, the governor, then gave his evidence as to the character of the youths thus classified by M. Voisin. He stated that M. Voisin's first class included, in a very great proportion, the bad characters in the house, or those whose intellectual faculties were most limited. The second and third divisions appeared to M. Boullon not to offer any striking differences between each other; but the fourth class comprehended almost all those children who were most docile, most intelligent, and most industrious. This class included the greater number of those who were employed as monitors in the school, or as overlookers in the workshops. The testimony of M. de Villars corresponded almost completely with that of M. Boullon.

A long discussion followed the reading of the report in the academy. The two chief objections raised by the debaters were, that the testimony of the governor and secretary of the gaol was given after M. Voisin had pronounced on the characters of the boys, instead of before he had expressed his opinion; and secondly, that M. Voisin's classification implies that the intellectual and moral faculties are intimately connected, and become developed in the same proportion, while in reality no such absolute relation between mental and moral endowments exists.

Bulletin de l'Académie Royale, Novembre, 1841.

PATHOLOGY, PRACTICAL MEDICINE, AND THERAPEUTICS.

On Inflammation of the Umbilical Arteries, as a Cause of Trismus Neonatorum. By Dr. Levy.

This theory was originally promulgated by Colles, in 1818, but has since been opposed by Labatt and Elsässer, whilst it received additional confirmation from the researches of Busch of Berlin, in 1837. Dr. Levy has had more numerous opportunities of investigating this remarkable malady than usually falls to the lot of practitioners in other parts of Europe.

In 1838-9 he attended 22 cases in the Lying-in Institution in Copenhagen. Of these, 20 died and only 2 recovered. Of those that died, 15 were examined carefully after death, and in 14 there were the most decided marks of inflammation in the umbilical arteries. Dr. Levy has found that the principal seat of the inflammatory action is in that part of the umbilical arteries which lies along the urinary bladder. Inflammation is always present in the artery of both sides, though rarely in an equal degree.

Considerable variety was observed in the appearance of the internal coats of the artery, but externally its diameter was always increased, and the peritoneum surrounding it presented evident marks of inflammation; for in several cases this membrane was much injected with red blood, and, in three instances, adhered, by effusions of coagulable lymph, to the jejunum or omentum. On incising the arteries themselves their walls were found to be very much thickened, and their dilated cavities contained more or less of a dark reddish brown or greenish puriform matter, which was always extremely fetid. Upon the removal of this matter the coats of the arteries presented the following alterations:

1. Inflammatory discoloration, and inequality of surface of the tunica intima.

2. Thickening of the tunica intima, or of its subjacent cellular tissue. This

spongy tumefaction was one of the most frequent alterations in the umbilical arteries.

3. Ulcerative destruction of the tunica intima, so that in several points this membrane was totally wanting. This appearance was often accompanied by spongy thickening of the subjacent cellular tissue noticed above. These ulcerations were in general superficial, but in two instances the destructive process had extended to the peritoneum. In another case the umbilical artery of the right side was completely perforated, and the spot where this had occurred was surrounded by a layer of thick ichorous matter, which here and there covered also the posterior wall of the bladder.

4. Softening and consequent rupture of the walls of the umbilical arteries. This occurred but once, viz. in that portion of the artery which lies on the superior fundus of the bladder. From this point almost to the navel both arteries were in a state of gelatinous softening, their different coats no longer to be distinguished. At the distance of about an inch from the navel, was an irregularly oval and somewhat lacerated opening in the walls of the artery, from whence about an ounce of ichorous-looking fluid had exuded into the cavity of the pelvis. Even the peritoneum covering the artery was here completely softened, and the whole bore no small resemblance to the well-known gelatinous softening of the coats of the stomach.

5. Gangrene of the umbilical arteries was but once observed; in a child of seven days old, which died forty-eight hours after the commencement of the disease. In the artery of the right side there was found pus, with great thickening of the portion running along the urinary bladder, where also a firm coagulum was discovered attached to the inflamed walls of the vessel. The left umbilical artery was nearly double the size of the right, and externally of a blueish green colour. It contained a large quantity of greenish black ichorous matter, mixed with shreds of the tunica intima, and which exhaled a most putrid and offensive odour.

Dr. Levy paid particular attention in all these cases to the state of the external umbilicus, in order to ascertain how far inflammation of the umbilical arteries can be inferred from the appearance of the navel during life. In four cases it was perfectly unchanged during the whole course of the disease; in ten other instances the surface was in like manner unaltered, but the fundus was more or less red, and filled with a puriform fluid, which quickly reappeared when removed, and in general shortly before death the navel became of a greenish colour.

Dr. Levy then proceeds to examine the theory of Elsässer, who in twenty cases had always discovered after death marks of congestion, and in sixteen of these actual extravasation of blood into the spinal canal. But Dr. Levy believes these appearances to result chiefly from the actual violence necessarily employed in laying open the spinal canal, even in young children; and also perhaps from congestion, as the result of the convulsive disease.

Dr. Levy has twice observed suppuration in the umbilical arteries after death, where no trismus had occurred during life.

He has succeeded in saving two patients by a leech or two applied to the umbilicus, with warm fomentations to the abdomen, and by anti-spasmodics given internally.

Bibl. for Læger, Sept. 1840.

An Account of an Epidemic of Typhus, accompanied with Apoplectic and Tetanic Symptoms, which was observed in the district of Cervaro and parts adjacent during the winter and commencement of the spring of 1840. By Professor de Renzi.

This is one of several papers by different physicians on an epidemic which appears to have excited considerable attention. It broke out at Mignano in February, 1840, and caused much alarm from a report which spread among the vulgar that the cholera had made its appearance. This was at once ascertained

to be false, and at the end of a month the disease ceased in Mignano, but began to spread at Cervaro and in other communes of that district. Almost all of the inhabitants were more or less affected by the epidemic influence, and suffered from giddiness, lassitude, and great depression of spirits; symptoms which were especially severe in those who had been attacked by intermittents during the previous year.

The disease made its onset differently in different cases. In some persons the first symptom was a sense of formication beginning at the feet and extending over the whole body; others suffered from general uneasiness, pain in the head or back, particularly in the cervical and dorsal regions, attended with difficulty on stooping forward or bending the neck. Occasionally this sensation extended to the lower limbs, and was accompanied with spasmodic contractions. Sometimes the disease was ushered in by an apoplectic seizure with loss of speech and consciousness, lasting for some hours, and followed by a kind of febrile reaction. Other persons fell down in convulsions, with trismus, the neck being drawn forcibly backwards, the whole trunk rigid, spasm of the extremities, and efforts to vomit, sometimes without anything being rejected, while at other times the patient would throw up some lumbrici.

With the exception of a few very mild cases the disease ran much the same course, whatever were the symptoms which ushered in the attack. It might usually be divided into three stages: of which the first was characterized by violent irritation of the nervous centres; the second was the stage of reaction with gastro-nervous fever; the third was attended with putrid or adynamic symptoms. No particular crisis was observed, nor any discharge which could be looked on as critical.

The stage of reaction was accompanied with fever, a hard, quick, and frequent pulse, cephalalgia, and a painful sense of retraction of the head. The pain in the head increased in severity, affecting principally the occiput and extending to the neck and along the spine. In some instances the pain in the spine was dreadfully severe, and the sacrum was referred to as the seat of the greatest suffering. When very violent, this pain was followed by opisthotonos, so complete as to bend the spine into the form of a roman S. Trismus, difficult deglutition, with disinclination for all drinks, subsultus, and a tremulous state of the limbs existed in the severest cases. The tongue was dry, the teeth were coated with sordes, the patient could scarcely speak, the voice was stridulous, except in those instances where there existed complete aphonia. The bowels were costive, and lumbrici were voided by stool, or crept out of the mouth. When the symptoms however presented such severity, the patients usually died in twenty-four or forty-eight hours; or if they survived they continued hemiplegic or lost the use of some of their senses, or fell into a state of low, nervous fever.

In less formidable cases occasional remissions took place, and the nervous symptoms were not so severe, but even then a degree of tetanus and pain in the joints invariably existed. In these cases delirium came on about the fifth day, and was sometimes violent, at other times quiet and muttering. To the delirium, coma succeeded, usually about the seventh day; but when the disease had a fatal issue coma set in very early, even without previous delirium, or after it had existed only for a very few hours. When the patients lived until the second week, the prevailing symptoms were those of adynamic fever, and livid spots frequently appeared on the surface of the body.

General congestion of the intestinal canal, with softening of the mucous membrane of the colon, and injection of the vessels of the peritoneum were found after death. The bowels often contained lumbrici, and the spleen and liver were usually very large. The heart and large vessels contained black and liquid blood; the thoracic viscera generally were much congested, as were the vessels of the brain, but extravasations of blood into the cerebral substance were never met with.

The disease seems to have been very fatal; but Professor Renzi is unable to

give statistical details concerning all the communes in which it prevailed. He states, however, that of 218 who were attacked, 116 or more than half died. Those who principally fell victims to the epidemic were young men from sixteen to thirty, especially the robust and healthy. The duration of the disease was very various, some who were attacked dying within a few hours, others in the course of a week, some during the second or third week, and one even so late as fifty days after the seizure. As the epidemic declined, it by degrees assumed the characters of a gastro-rheumatic fever.

Oleaginous purgatives, small doses of calomel, and the solutions of acetate of ammonia and of tartar emetic, were the chief internal remedies in the milder cases; and warm baths, blisters to the extremities, and frictions with belladonna to the spine, the principal external applications. The severer cases were not benefited by any kind of treatment whatever.

Dr. Renzi attributes the disease to the injurious influence exerted on the atmosphere by the cultivation of rice, for though the disease appeared to spread by contagion, yet it did not present such violent symptoms anywhere else as in the immediate vicinity of rice plantations.

Il Filiatre Sebezio. Luglio, 1840.

In the same Journal for May, 1841, is a description by Professor Renzi, of a similar epidemic which occurred at S. Marzano, and which, like the epidemic at Mignano, proved very fatal, fifty persons dying out of eighty who were attacked by it. The symptoms so closely resemble those observed at Mignano, that their detail is unnecessary, but the circumstances under which the disease broke out are worth notice. S. Marzano is seated on a level near the Saono, and all the streams from the neighbouring mountains traverse the surrounding country. In January, 1840, the Saono was so swollen by the rains that it overflowed its banks, and, inundating the plain, left the commune of S. Marzano in a sort of island. On the cessation of the rains unusually warm weather set in. The waters rapidly subsided, and the exhalations from the ground became exceedingly offensive. The peasantry, who were predisposed to disease by the privations they had undergone, suffered much from pursuing their labours in this poisonous air, and accordingly in January the disease broke out among them.

The Number for September, 1840, contains an account by Dr. Salvatori of a kindred disease, the typhoid cephalalgia, which was observed among the galley slaves at Procida. This paper affords proof of the contagious nature of the disease, thus confirming the opinion expressed by Professor Renzi. It also shows that when patients are not exposed to the evils of a malarious atmosphere, the disease loses much of its fatal character. At the commencement of April, 1840, some new convicts came to the galleys at Procida, having recently been discharged from the prisons at Potenza, where a disease was then prevailing exactly resembling the epidemic at Mignano. These were the first attacked; those convicts who had been longest employed in the galleys, or such as were inmates of the hospital for some chronic malady suffered next. Other diseases then existing in the hospital soon put on the characters of this typhus, but it did not spread beyond the convict hospital and the galleys. Severe pains in the head and loins occurred as in the epidemic at Mignano. Trismus and coma were not invariably met with, and the whole course of the disease was so mild, that of sixty-two who were attacked by it only one died.

This epidemic in the *circondario* of Cervaro has been made the subject of a special work, as well as of several essays in the Italian journals. Dr. Spada, who was appointed by the Neapolitan government to superintend the treatment of the disease, has written a book upon it, a brief notice of which appears in the Filiatre-Sebezio for December, 1840. This notice contains but little account of the malady beyond what we have already given. It is however interesting, inasmuch as it points out some analogies between the disease and some of those epidemics which a few centuries ago were prevalent throughout Europe. Dr. Spada suggests that there is a similarity between the fever and the acute scurvy of the middle ages, while many of its symptoms resemble those of a convulsive

disease to which sheep are subject from eating the poisonous anemone. The reviewer remarks, that its convulsive symptoms bear a closer resemblance to those of ergotism, but does not infer from this that the two diseases are alike in character. He labours indeed on the contrary to prove that the disease which prevailed at Cervaro was nothing else than an epidemic typhus fever. In this opinion we think most will acquiesce who are at all familiar with the descriptions of the malignant fevers which devastated Italy during the 15th, 17th, and early part of the 18th century.

On the Diceras, a rare form of Intestinal Worm. By Professor Eschricht.

Some worms were sent to the professor by a friend practising as a physician on the island of Bornholm. They had been passed in enormous quantities by his little daughter after a severe disease, and he was anxious to know their name. To his astonishment, Eschricht recognized in them worms of a kind which Bremser had classed among the pseudhelminthia, and had given a plate of on the title-page of his "Living Worms in Living Men." The only author by whom they were ever described is Sultzer, of Strasburg, the title of whose work is "Diss. sur un ver intestinal nouvellement découvert et decrit sous le nom de Bicorne rude." Strasburg, 1808. His account of their form and structure is most accurate, but Bremser having laid it down that they were nothing but seeds, it has been neglected and almost forgotten.

Eschricht has fully comfirmed Sultzer's description of them, and says that they are veritable entozoa cannot be doubted; but "how it can have happened that notwithstanding the enormous quantity of them found in these two cases, they have occurred only in these two, and in these, once in 1804, at Strasburg, and once in 1841, on the island of Bornholm, is certainly hard to explain, especially to me and others who do not believe in equivocal generation."

Müller's Archiv. Heft v. 1841.

Disease of Sappers and Miners. By Dr. Kanzler, of Mainz.

During the exercises of the 7th and 8th pioneer-divisions last August, at Coblentz, I had frequent opportunities of observing this peculiar (and as far as I know undescribed) disease, in all its forms. When the mines laid in the long subterranean passages, called galleries, were fired by trains and blown up, the air in the galleries was at once purified by appropriate machines; but a complete purification of it was quite impossible, and very often the miners would go into it too soon. It was therefore not uncommon to see within five minutes after an explosion, fifteen or twenty men brought out attacked with the *mine disease.* In this condition I saw altogether upwards of 200.

The disease presented itself in different degrees. In the slightest degree there was only a heavy pain in the head, situated especially at the forehead and temples, and giving notice to those who were affected with it, that they should leave the galleries and go into the open air; which if they did not do, a higher degree of the affection soon came on. In the fresh air the headach commonly soon ceased; but it usually came on again as soon as the patients went back into the galleries, and it thus rendered them unfit for work for the whole day.

In a severer form of the disease the patients were seized with an excessive oppression at the chest, as if it were tied round with a cord; an instant after they lost their consciousness, fell to the ground, and had to be carried out of the gallery. Sometimes a third and higher form occurred, in which to the symptoms just described there were added clonic spasms, the patient's face becoming pale or livid, foam appearing at the mouth, and the thumbs being firmly bent in upon the palms. There was also a peculiar form of the disease in which the patients fell into a kind of drunkenness; they grew very talkative at their work, laughed incessantly and without cause, and jumped and danced about just like tipsy men. This state in some cases ceased on exposure to the fresh air; but in

others it suddenly gave place to the severest headach, and before they were seen the patients fell down unconscious and convulsed. The unconsciousness and convulsions sometimes lasted for but a few minutes, sometimes for half an hour; and they were almost always followed by the condition which the patients described as the most painful of all, namely, a constant retching and a most terrible nausea, which only rarely ended in actual vomiting. At the end of all the disease a distressing heavy headach came on, and in some cases lasted three days.

The cause of this affection was of course the inhaling of gases which were formed in the galleries by the explosion of the powder. The form which presented symptoms like those of drunkenness was probably due to the production of nitrous oxyde, which, it is well-known, when inspired in sufficient quantity has intoxicating properties.

The treatment was very simple. If there were nothing but headach, the greatest relief was afforded by pouring some vinegar on a handkerchief and making the patient inhale its vapour; and with this fastened under his nose he might even go back into the first part of the gallery and continue his work. When men were brought out unconscious, dashing them with cold water, and the snuffing of strong odours were employed; and when the nausea and retching came on, nothing acted more quickly or certainly than a spoonful of wine with 20 or 30 drops of spts. æther. sulph. In some cases of severe convulsions, when the face was dark, livid, and the pulse full and large, bleeding was beneficial. In those who had the drunken form of the disease, it answered best to let them recover slowly in the fresh air, and then to make them keep quiet.

Casper's Wochenschrift. Juli 17, 1841.

On the Contagious Nature of Pemphigus Neonatorum.
By Dr. Scharlau, of Stettin.

[The following observations seem to prove that popular opinion, which has regarded this disease as contagious, is more correct than that commonly entertained in the profession. Judging by the character of this and many others of his papers that have fallen under our notice, the author is one on whose statements full reliance may be placed.]

A well-conditioned child, born of healthy parents, was attacked on the fourth day after birth with an eruption of bullæ varying in size from that of a lentil to that of a hazel-nut, and increasing daily in number. The fluid which they contained was yellowish-white, strongly alkaline, and mixed with a number of oval and round corpuscles, visible only with the microscope. The eruption took place at different periods, so that many of the bullæ were dry when others first broke out.

A second perfectly healthy child was bathed in the same water and washed with the same sponge as the preceding; and after a few days an eruption, coming out in pustules and drying in scales, appeared on its head, and at the same time one of bullæ exactly like those on the infant came out on the neck and legs. The mother, the nurse who bathed the child, and a girl twelve years old who had been with them both, were also at the same time affected with an eruption of bullæ on the hands, face, and legs in distinct spots. The author himself, who had often handled the infant, and then put his hand upon his chin and his lower jaw, soon after felt a burning pain there, as if it had been rubbed with caustic, and this was followed by the appearance of a red spot with a yellow pustule, which on disappearing left a small scurfy patch.

A small quantity of the fluid from a bulla was inserted under the cuticle of the fore-finger. After some time a burning sensation like that caused by nettles was felt, and after thirty-six hours an irritating pain, with a rosy red patch with a dark spot in the middle. Forty-eight hours after the inoculation, the pain had increased, and the cuticle was elevated in little papillæ like grains of sand; sixty hours after, a bulla containing a clear lymph was fully developed, and

this, after seventy-two hours, acquired a yellow colour, and then formed a crust.

Three pustules on the neck of the second child were touched with concentrated acetic acid thirty-six hours after the formation of the red spot and the elevation of its centre. After twelve hours the redness had diffused itself more widely, but after twenty-four it completely vanished without any formation of bullæ.

Ordinary baths appearing of no benefit, and internal medicines producing no good effect, the author was induced, by the result of the experiment just mentioned, to add to each bath three ounces of common vinegar. The result was very striking; for the eruption, which had gone on increasing for fourteen days, was now in a few more completely cured. The author supposes that this was brought about by neutralizing the alkaline fluid of the bullæ, and suggests that in the cases, such as are recorded, in which the fluid is acid, alkalies should for the same purpose be added to the baths.

Casper's Wochenschrift. Marz 20, 1841.

Account of an Epidemic of Sweating Sickness, which prevailed in several Communes of La Dordogne and La Charente. By MM. Rayer and Bricheteau.

The epidemic broke out in May, 1841, the weather being at that time very hot, southerly winds prevalent, and the atmosphere loaded with electricity. The preceding winter had been damp and rainy, and the wind blowing almost constantly from the south, and the spring had set in with sultry heat. The epidemic constitution had been remarkable for several months for the frequency of the eruptive fevers; intermittents, too, had been very common.

The disease prevailed especially in damp and marshy situations, and was particularly severe along the borders of the Lisone, a river of Angouleme, which overflows its banks, and renders the neighbouring country swampy. The persons attacked by the epidemic were almost all between twenty and forty-five years old: youth and old age appearing to be alike exempt from its seizure. No satisfactory statements appear with reference to the mortality occasioned by the disease; it appears, however, to have differed much in different districts, and the death of several individuals was attributed by the physicians to the effects of panic rather than of the malady.

In its milder form the disease was ushered in by sense of pain and heaviness in the head, and cardialgia, which having lasted for some hours, or even for a whole day, were followed by sweat. It happened, however, sometimes that the sweat broke out suddenly, without any premonitory symptom, while persons were engaged in their ordinary occupations; or that, waking in the night, they found themselves bathed in perspiration. A sense of tingling in the skin usually preceded the sweat; after it had broken out the patient had fever, with redness of the face, singing in the ears, great sensibility of the eyes, tenderness of the abdomen, hemorrhage from the nose, nausea, loss of appetite, and vomiting, but without thirst.

After the lapse of twenty-four or seventy-two hours the eruption made its appearance, and usually announced the termination of the disease. The eruption was most abundant about the arms, chest, face, and precordia; it usually consisted of sudamina, which sometimes were too minute to be distinguished by the naked eye; but sometimes it had more the appearance of eczema, or showed itself in large red patches like scarlatina, with interspaces where the skin retained its natural appearance. The disease usually ran its course in from six to ten days. The shortest interval between the premonitory symptoms and the outbreak of the eruption was three days, the longest six days, and desquamation followed after about three or four days more.

In those cases where the affection assumed a malignant character, it appeared suddenly and after brief but violent premonitory symptoms, abundant fetid sweats broke out over the whole body. The tongue soon became dry and tre-

mulous, the face sunken, the eye haggard, the countenance had a leaden hue; there was delirium occasionally, with syncope, automatic movements, carphologia, and death followed in seven or eight hours.

In the milder cases very little medical treatment was adopted beyond the enjoining abstinence and rest, and taking care that the patient did not expose himself imprudently to the cold. Whenever the fever showed signs of remission or intermission, sulphate of quinine was employed, and symptoms of malignancy were combated by musk, æther, and similar remedies.

This epidemic appeared in almost all points to have resembled that which prevailed in the department De l'Oise; no notable difference of opinion arose among the medical practitioners with reference to its treatment, and no important addition has been made by the reports of the physicians who witnessed it, to our knowledge, of the disease.

Bulletin de l'Académie Royale, Nov. 30, 1841.

Memoir on Softening of the Brain. By M. Durand Fardel.

The object of this paper is to illustrate the inflammatory nature of the disease. Several observations are detailed in which acute *ramollissement* occurred; and in all there existed redness of the brain, as well as softness of its tissue. This redness was in most instances produced by a partial and well-marked injection of vessels; in others there was sanguineous infiltration, as well as vascular injection. The blood was in general evidently derived from the rupture of vessels, and though it existed in a few cases unaccompanied by any vascular injection, analogy would still lead us to refer it to the same cause. There are indeed but three sources from which hemorrhage into the tissue of an organ could be derived. It must either result from some alteration in the blood, in which case hemorrhage ought to occur simultaneously into the tissue of several organs; or it may be produced by some alteration in the coats of the vessels—an hypothesis in this case purely gratuitous, and opposed by the fact that ossification of the arteries of the cranium did not exist in any of the eight observations recorded in the paper. Lastly, cerebral congestion and consequent rupture of vessels would account for the occurrence of the redness which exists at the commencement of softening of the brain, and few will deny that softening of an organ consequent on cerebral congestion is the result of inflammatory action.

When death does not take place during the first stage of ramollissement, the disease passes into the chronic state, and changes in the cerebral structure occur in which three different stages may be noticed.

The first stage is characterized by the disappearance of the redness, without any other alteration in the condition of the softened brain. It is to the disease at this period that the description applies which most writers have given of softening of the brain.

In the second period, the ramollissement undergoes very different modifications, according to the part of the brain which it involves. In the cortical substance of the convolutions it assumes the form of yellow membraniform patches; but in the rest of the brain the softened parts become attenuated, the cellular texture of the cerebral substance becomes exposed and infiltrated with a turbid whitish liquid, which appears to consist of the nervous pulp liquefied. To this condition the author applies the name of cellular infiltration.

In the third period, the softened cerebral substance begins to disappear, and real ulcerations form on the surface of the brain, while in its interior the loss of substance gives rise to excavations which must not be confounded with the traces left by the cerebral hemorrhage.

It is difficult to state anything positively as to the time occupied by these changes. Sometimes they occur with great rapidity, while in other instances their advance is extremely slow—so slow, indeed, that it would almost appear as though the disease might remain stationary for an indefinite length of time in any one of its stages. The advance of the changes of the brain is usually

indicated by a corresponding progress in the gravity of the symptoms, while the arrest of the disease is accompanied by a corresponding improvement in the patient's condition.

There is a further distinction necessary to be made between the cases in which the ramollissement remains circumscribed to its original limits and those in which the disease has extended to surrounding parts, so as to present the appearance of a brain, different parts of which are in different stages of ramollissement. These latter cases have afforded M. Fardel the opportunity of ascertaining the various stages of softening of the brain which form the subject of this memoir.

The cases related by M. Fardel, and the minute anatomical details into which he enters do not admit of abstract. The memoir, however, is highly interesting, and will well repay a careful perusal.

Archives Générales de Médecine. Jan. and Feb. 1842.

Researches into the Physical Causes of Metallic Tinkling, or Amphoric Ronchus. By M. de Castelnau, House-Surgeon (interne) of the Hospitals.

The author commences this paper by reviewing the different theories which have been suggested to explain this phenomenon, and pronounces them all more or less unsatisfactory. The hypothesis most usually adopted, and which attributes the sound to the bursting of an air-bubble on the surface of the fluid effused into the pleural cavity, is regarded by him as equally defective with the others. Experiments which he details have led him to the conclusion, that the formation of bubbles of air at the surface of an effusion is almost impossible, even in those cases where the perforation of the pleura is below the level of the fluid, while its occurrence is altogether out of the question when there exists perforations of the pleura above the level of the effusion.

The occurrence of pulmonary fistula, however, above the level of an effusion is by no means unusual; it is even stated by M. Raciborski to be the case in by far the greater number of instances. Laennec, too, had observed that, after the operation for empyema, in which the puncture is made above the level of the fluid, metallic tinkling is frequently heard; while if the wound had been made too large the respiration acquires an amphoric sound. This phenomenon can be explained only by supposing metallic tinkling to be a variety of the amphoric sound; and M. C.'s experiments on the dead subject have convinced him that such is really the case. He further deduces from them the following conclusions:

1. That the physical conditions essential to the production of metallic tinkling are: *a*, The existence of a tolerably large cavity, containing air, either with or without fluid; *b*, The communication of the external air with this cavity; *c*, The production of sonorous vibrations in the channels by which this communication is established.

2. The causes which give rise to these vibrations are identical with those which produce moist sounds in general.

3. Metallic tinkling may be called an amphoric ronchus, with as much propriety as the term amphoric may be applied to the respiration, voice, or cough.

4. Those cases, if indeed any such exist, in which metallic tinkling occurs independent of the above-mentioned conditions, are exceptions to the rule, as are also the theories advanced in explanation of them.

In confirmation of these views, a case is related in which metallic tinkling was heard, and the respiration, voice, and cough had an amphoric sound in a phthisical patient. After death the left lung was found to be occupied by two very large cavities, which had destroyed the greater part of its substance. A septum, only three or four lines thick, separated the two cavities from each other. The superior was empty; the other contained about four ounces of broken-down tuberculous matter, in a semi-fluid rather than a liquid state, and the openings of the bronchi into the cavity were all, with the exception of two, situated above the level of the softened tubercle. Similar phenomena were ob-

served in the case of a man in whom fracture of the ribs and clavicle was followed by subcutaneous emphysema and pneumothorax. The metallic tinkling and amphoric respiration disappeared gradually as the man advanced towards convalescence; and there was no reason, at any period of his illness, to suppose the existence of fluid in the cavity of the pleura. He likewise alludes to a third case, in which a wound in the chest with a knife, though unaccompanied with subcutaneous emphysema, or even with hæmoptysis, was followed by metallic tinkling and amphoric sounds.

In a second paper on the same subject, two other cases are adduced in confirmation of the author's views.

Archives Générales de Médecine. Oct. et Nov. 1841.

Analysis of the Urine in Scarlatina. By Dr. S. F. Simon, of Berlin

The urine in scarlatina almost always presents the characters of the urine of inflammation, being scanty, of a deep red colour, strongly acid, and often of a higher specific gravity than in health. In the stage of desquamation it becomes more copious, but retains its dark colour, and often contains albumen.

Dr. Simon analysed the urine of a boy aged five years, suffering under scarlet fever, with considerable affection of the sensorium and putrid odour from mouth and nose. The urine had a dark yellow colour, was slightly acid when first voided, but soon became alkaline on standing, and then threw down a copious white sediment. Under the microscope, this sediment was seen to be composed of large opaque globules, and a fine granular deposit, with mucous globules and a few crystals of phosphate of ammonia and magnesia. It was almost completely dissolved when heated, and small rhomboid crystals of lithic acid appeared on treating it with hydrochloric acid. The amorphous residuum consisted of lithate of soda and lithate of ammonia. During desquamation the urine still continued to become very speedily alkalescent, and still threw down the white sediment, but without becoming perfectly clear. No epithelium scales could be discovered in this sediment, but large masses of epithelium cells existed in the turbid urine which covered the sediment, and some of the cells seemed to have been slightly acted on by the alkalescence of the urine. The above fact shows that the process of desquamation extends to the lining of the bladder.

The urine of this patient had a specific gravity of 1022; 1000 parts contained 56·7 of solid matter, of which 19·3 were urea, and 1 64 lithic acid, which was in a state of combination with bases in the urine.

Allgemeine medicinische central-Zeitung. Feb. 5, 1842.

Researches into the real Nature of Œdema of the Glottis. By M. Bricheteau, Physician to the Hospital Necker.

The object of this paper is to disprove the existence of œdema of the glottis as a distinct disease, unconnected with other affections of the larynx. M. Bricheteau criticises the facts adduced in Bayle's paper on the subject, and laments their incompleteness, as well as that of the cases which are found in the thesis of M. Thuillier. M. Bouillaud published three observations in the year 1825 tending to prove that this disease is in reality an inflammation of the larynx, pharynx, and surrounding parts. The remarks contained in the prize essay of MM. Trousseau and Belloc favour the same conclusion, which is further strengthened by the three cases detailed by the present author. Two of these cases terminated in recovery, but in the third the patient sank after the performance of tracheotomy. Some disease of the larynx existed in all three instances, to which œdema of the glottis succeeded.

This œdema, which, strictly speaking, affects the lips of the glottis not the glottis itself, is always a very serious affection, on account of the seat which it occupies. It cannot, however, be regarded as an idiopathic disease, and is itself more frequently an inflammatory affection or a purulent infiltration into the part than

a serous effusion. It supervenes in the course of various diseases of the larynx, and should not occupy a different place in works on pathology from œdema or tumefaction of a part produced by any morbid poison, or from the various symptoms which attend syphilis, or from ulcerations of the intestines in fever.

Archives Générales de Médecine. Nov. 1841.

Account of a Case of Acute Glanders in the Human Subject. By M. Bouillaud.

A youth aged seventeen years, a day labourer, was admitted into the Charité under the care of M. Velpeau. He had been ill for three weeks, from a swelling at the upper part of his chest, which was treated by the application of a few leeches, but without much benefit, and after being confined to bed at his own home he entered the hospital. After remaining for a fortnight under M. Velpeau's care, symptoms of erysipelas of the face came on, and the patient fell into a typhoid state, on which account, after having been bled by M. Velpeau's orders, he was transferred to the medical wards, and came under the care of M. Bouillaud on June 27, 1841.

There existed at that time some tumefaction of the face, the skin of the forehead was tense and glistening, and the eyelids were so much swollen as to close the eyes completely. The skin generally was very hot, the abdomen rather tympanitic, the face somewhat sunken. He was bled from the arm, and on the following day expressed himself as being slightly relieved, but there was greater depression of countenance; the pulse had risen from 120 to 132, and was soft. There existed great feeling of weakness, and the patient had been restless and delirious during the night; one eye was closed, the other partially open; the lips were dry; the patient expectorated a little viscid matter from the mouth, and a little blood was mixed with some expectoration derived from the posterior nares, but there was no running from the nose.

On the 29th delirium had become more constant, the prostration and typhoid symptoms had increased, the face continued swollen, and the eyes were closed. The delirium continued through the following day, and on the 30th the patient was evidently sinking, and died in the course of the day. His face, however, on that day presented an eruption, likewise evident on the limbs, the pustules of which were intermediate in size between those of ecthyma and variola, and destitute of any central depression. The eyelids were agglutinated by a purulent secretion; and, in addition to the tumefaction already noticed, there was a circumscribed swelling above the eyebrows, which presented numerous, confluent, livid pustules, in which ulceration was just commencing.

It was this eruption, precisely similar in its appearance to that which has been described as characteristic of glanders, that led M. Bouillaud to suspect the real nature of the affection, and induced him to examine the cavities of the nose and mouth after death with particular care. No peculiar excretion was found in the mouth or nares, but the mucous membrane was universally red, and in the nares and back of the pharynx were very numerous grayish patches, produced either by ulcerations or by pustules which appeared to be the origin of ulcerations. The ulcerations were not deep, they varied in size from four to twelve millimetres, and between them small whitish pustules were interspersed. The pustules noticed during life on the surface of the body were flaccid after death, but contained pus of a yellowish colour, and several small purulent depôts were found beneath the skin of the right forearm. The particular eruption above the eyebrows had put on a gangrenous appearance.

The appearance of the pustular eruption during life, and the state of the membrane of the mouth and nares found after death, accord exactly with what are described as the characteristics of glanders. The absence of running from the nose might indeed throw some doubt upon the nature of the disease, but since it was ascertained after the patient's death that for six months he had been daily occupied with grooming a glandered horse, the case must be regarded as proving the possibility of glanders putting on a latent form, and

arriving almost at its termination before it displays those symptoms which in the present state of our knowledge are regarded as diagnostic.

M. Bouillaud attaches considerable value to the pseudo-varioloid eruption described in the foregoing case, as characteristic of glanders, and alludes to three other recent instances in which it was observed.

Bulletin de l'Académie Royale. December 15, 1841.

In the same journal are two other cases of glanders in man, the former of which is described with considerable minuteness in the Archives Générales de Médecine for December, 1841, by Mr. Tardieu.

The first case is one of chronic glanders terminating in acute glanders. The subject of the observation, a man thirty-four years old, served as groom at the veterinary school of Alfort for three years, from 1834 to 1837, during which time he had daily to attend to glandered horses. About the end of this time he began to suffer from constant pain in the throat, he felt stuffed in the head, and blood came whenever he blew his nose. He consulted several medical men without relief; but having left Alfort, continued his occupation as a groom, and often had the care of glandered horses. About the middle of July 1841, an abscess on the left instep forced him to seek admission into the Charité. Immediately after he entered the hospital, a large fungoid ulceration was observed on the palate, which resisted a mercurial treatment and frequent cauterizations. He grew weaker, his constitution broke down, and on the 5th November the symptoms of acute glanders appeared, and proved fatal in five days.

On a post-mortem examination all the ordinary consequences of acute pustular glanders were found as well in the nasal fossæ as in the viscera. There existed, however, besides traces of old disease, 1, In the nose; 2, In the palate, where beneath the ulcerated mucous membrane the bone was found rough and pierced with holes, as though it had been ulcerated; 3, In the air-passages, whose internal surface, from the upper extremity of the epiglottis to the division of the bronchi, was but one vast cicatrix, which had evidently existed for some time. These lesions have often been observed in horses, and are of a character not to be mistaken; but this is the first instance in which cicatrices in the trachea, the result of farcy or glanders, have been observed in the human subject.

The second case is that detailed in our last No., p. 235.

Researches on Saccharine Diabetes. By Dr. Bouchardat.

This is the second of two papers on the subject, read by M. Bouchardat at the Academy of Sciences. In his former essay he showed that the quantity of sugar in diabetic urine is in direct proportion to the bread or feculent substances which the patient takes for food. He further ascertained that the water which persons suffering under diabetes take in such abundance is not usually more than is necessary to effect completely, by means of the diastase, the transformation of the fecula into sugar.

From these observations he had deduced the conclusion that, for the cure of diabetes nothing more is requisite than to withhold as far as possible all fluids, or articles of diet containing sugar or fecula; and the present paper contains the results of some cases in which this plan was adopted.

M. Bouchardat found it impossible to withhold farinaceous food and fluids as completely as he wished, and consequently his success was but temporary. The nutritive properties of gluten having recently become more known by the researches of the *commission de la gelatine*, he next endeavoured to form from it an aliment which might supply the place of bread. In this he so far succeeded as to have formed an exceedingly palatable substitute for bread, with the addition of only a fifth of farina. The beneficial effects of this substitute for bread are shown in two tables; from which it appears, that when common bread and that made from gluten were given on alternate days, the employment of the latter was always accompanied with an extremely marked diminution both in the quantity of urine and in the amount of sugar it contained. The next indication

would be to promote the perspiration, and to restore to a healthy character the secretion of the diseased mucous membrane of the stomach. M. Bouchardat insists on flannel being worn next the skin, and regards it, with the employment of opiates and preparations of ammonia, as the means best calculated to promote diaphoresis.

The histories of four patients who were submitted to this treatment are detailed. Two received but slight benefit; a third was cured so completely that all traces of sugar disappeared from his urine, which presented in all respects the characters of the healthy secretion; and so small a proportion of sugar is contained in the urine of the fourth patient, that M. Bouchardat confidently anticipates his perfect recovery. It is worthy of observation that the treatment was not altogether identical in the four cases; for the first two did not wear flannel garments next their skin, and the employment of carbonate of ammonia in those instances was followed after two days by a change in the urine from acid to alkaline, together with a slight increase in the quantity of sugar. In the other two cases, the thickness of the flannel garment was always increased whenever the sugar in the urine became more abundant; and, notwithstanding the administration of the carbonate of ammonia, the urine of these two patients continued acid throughout.

Comptes Rendus de l'Académie. Nov. 15, 1841.

Case of Larvæ of Insects (Musca Stabulans) passed by Stool. By Professor Hoppe.

A girl of thirteen, of weak constitution, and whose father was in a high degree epileptic, was suddenly attacked with convulsions in November, 1839, which again returned in March, 1840. Upon the administration of vermifuge powders with large doses of ol. ricini, a great number of larvæ of the above-named insects were passed by stool. Occasional convulsive attacks recurred during the succeeding summer, and always subsided when similar evacuations were obtained by the same remedies. The convulsive paroxysms seldom lasted above two minutes at a time, and occurred only in the mornings before ten, A. M. In December last the patient had been for four months in the enjoyment of the most perfect health. The convulsive attacks were occasionally preceded by a peculiar imbecility of mind, so that, in endeavouring to leave the room, she was often totally unable to discover the door. Professor Hoppe, who relates this singular case, believes the larvæ to have been swallowed in fruit or vegetables during the preceding autumn.

Bibl. for Læger. December, 1840.

On Typhus in the Royal Frederick's Hospital at Copenhagen. By Professor Bang.

Professor Bang presents us with a statistical view of 890 cases of true typhoid fever, in the Royal Frederick's Hospital at Copenhagen, in the years 1837-8-9. The number of cases of typhus admitted in 1837 was 214; in 1838, 472; in 1839, 204. The average mortality of these three years was 216 in 890, or 1 in 4, nearly.

The fever began with common febrile symptoms, seldom exhibiting at the very commencement the malignant typhoid character. The pulse was generally full and strong, the bowels open; occasionally there appeared an exanthematous eruption (typhöse exanthem), but petechiæ were extremely rare. The typhoid exanthema was more or less of a red colour, and irregularly distributed over the body.

The disease showed itself under four different forms; i. e. cerebral typhus, pectoral typhus, abdominal typhus, vesical typhus.

In cerebral typhus the mortality was			1 in 3·8.
In pectoral typhus	,,	,,	1 in 3·1.
In abdominal typhus	,,	,,	1 in 5·3.
In vesical typhus	,,	,,	1 in 2·5.

The cerebral, abdominal, and pectoral forms presented nothing remarkable, but vesical typhus has hitherto been but little noticed. This form prevailed chiefly in 1838 and 1839, attacking 28 individuals, 11 of whom died. The age of those attacked was, from 16 to 20—6, 2 of whom died; 20 to 30—5 attacked, 1 died; 30 to 40—3 attacked, all recovered; 40 to 50—8 attacked, 5 died; 50 to 60—6 attacked, 3 died. In all the 28 cases pain was felt on pressure above the pubes; in 14 pain was complained of there without pressure; in 24 cases ischuria at first was present, which was replaced in 23 cases by enuresis; in 26 cases the urine let fall a muco-purulent and occasionally a sanguineous deposit, which was viscid, and adhered firmly to the sides of the vessel. In all these cases a putrid smell was exhaled from the urine, but in only 20 did it present any ammoniacal odour. It occurred 6 times with cerebral typhus, once with pectoral typhus, and 21 times in abdominal typhus. The typhoid exanthema appeared in 12 out of the 28 cases, and the fever always partook more or less of the hectic character. The vesical complication did not appear at the commencement of the disorder, but generally between the second and third weeks, and was to be recognized particularly by ischuria, which, however, was often concealed by the concomitant enuresis, by pain above the pubes, and shortly after by the peculiar appearances in the urine above described. The results of dissection in 9 cases of vesical typhus are exhibited in the following table.

Inflammation of the entire bladder in	3
ditto of fundus of ditto	1
Ulcerations in neck of ditto	3
ditto in fundus of ditto	1
Extravasation of the mucous membrane	3
Petechiæ	2
Small ossifications	1

The vesical ulcerations resembled closely those observed in the intestinal canal in abdominal typhus.

The treatment of the vesical form of typhus consisted in the application of leeches above the pubes, followed by warm fomentations, which, however seldom relieved the pain, until Professor Bang administered a mixture of sulphuric acid and opium, which combination he found to be the most efficacious in this severe form of typhus.

In all the above-mentioned varieties or forms of typhus, he strenuously recommends the employment of active purgatives, often administering calomel in doses of from 15 to 25 grains. He believes the diminution in the rate of mortality of last year, viz. 115 deaths in 724, entirely to arise from the active purgative treatment he has recently adopted in typhus.

Bibl. for Læger. August, 1840.

On the Utility of an Ointment of the Oxide of Zinc in the Treatment of Eczema, Impetigo, and Ecthyma. By M. Martin Solon.

The formula of M. Solon consists of,

Lard, 30 grains.
Oxide of zinc, from 1 to 3 grammes. (15 to 45 grs.)
Mix.

To be applied to the parts night and morning.

In eczema this ointment allays the itching, diminishes the redness and oozing from the surface, and greatly expedites the cure.

In that form of impetigo to which Alibert gave the name of melitagra, it is very useful after the scabs have once fallen off. It acts by diminishing the secretion of the skin, and preventing the formation of new pustules. It likewise promotes the desiccation of the pustules of ecthyma.

M. Solon does not recommend it as a specific in these affections, but merely as a valuable topical application.

Bulletin Général de Thérapeutique. Novembre, 1841.

SURGERY.

Rupture of the Spine, by a violent Muscular Effort. By M. Lasalle.

A man, thirty-six years old, was taken to the Maison Royale de Santé at Charenton, in a state of furious mania, and it was found necessary to confine him to his chair by means of two leather straps, which went from the upper part of its back and fixed his shoulders, and two others, which went from the same part a little lower down, and were fastened to his arms. After making various efforts to break from his confinement the patient rose up from his seat, threw his head forcibly backwards, and then flung it with great violence forwards. After this last movement the head remained bent on the neck, and the neck on the chest, and his limbs were completely paralysed. The author saw him soon afterwards, and found an absolute loss of power in all the muscles below the neck, except the diaphragm and those of the arms, which were but partially paralysed. There was neither bruise, nor swelling, nor deformity in the course of the vertebral column.

About thirty-six hours after these events, which were witnessed by a keeper and a fellow-patient, the man died, with all the usual signs of pressure on the cervical portion of the cord. On examination, a solution of continuity was found between the fifth and sixth cervical vertebræ; the posterior cervical ligament and the interspinales muscles were ruptured, and no bond of union remained between the spinous processes, whose bases were separated so as to expose the remains of the ligamentum subflavum and the membranes of the cord. The articular surfaces of the superior oblique processes of the sixth vertebra were also exposed, and its left transverse process was fractured. The intervertebral substance was torn; a part remained attached to the fifth, a part to the sixth vertebra; but there was no fracture of the bones, nor any material displacement of them. The dura mater at the seat of the injury was tinged with blood, and the surrounding cellular tissue was infiltrated with it. None of the membranes were torn, but in the interior of the cord, opposite the injury, there was a vast ecchymosis, extending downwards to the second dorsal and upwards to the third cervical vertebra.

[This case affords a new argument in favour of the mild treatment of the insane. *Restraint*, goading the unhappy man to fury, was the undoubted cause of death, and not the insanity merely.]

Gazette Médicale. Novembre 27, 1841.

Wound through the Sternum and the Arch of the Aorta. By Dr. Casper.

The peculiarity of this unique case is, that the wound was made with a common dinner-knife, only moderately sharp at its point and its edge three and a half inches long, and three fourths of an inch broad. With this a man stabbed his wife up to the hilt. She died in an instant; and the wound was found to have passed right through the upper part of the sternum into the arch of the aorta and the right lung. The bone was cleanly pierced, without any fracture or splintering.

Casper's Wochenschrift. January 1, 1842.

On the Treatment of Ulcers between the Toes. By Dr. Schlesier.

The author says that an invariably successful method of treating this affection, whether it have a syphilitic origin or not, is to sprinkle them thickly day after day with red precipitate, and then to cover them with dry charpie. The cure is generally effected in a few days.

Medicinische Zeitung. November 24, 1841.

On Syphilitic Muscular Retraction, and its Treatment.

THIS affection has been only recently observed by M. Ricord. It most frequently affects the flexors of the forearm, at least if a judgment may be formed from several cases that have lately occurred at the Hôpital des Vénériens. The patients had all attained the tertiary state of constitutional syphilis. In the three chiefly noticed, the flexors of the forearm seemed shortened under the influence of a permanent contraction, which prevented the arm from being straightened; but their tissues, though hard and stiff, did not present any appreciable alteration. The muscles were very painful, and the pain was aggravated at night. All the patients were cured in less than six days by the iodide of potassium.

Bulletin Générale de Thérapeutique. Janvier, 1842.

On the means of arresting the Hæmorrhage produced by certain fibrous Polypi of the Uterus. By M. LISFRANC.

WHEN local astringents and internal medicines fail, and the patient is too much reduced to permit the removal of the polypus, M. Lisfranc, having observed that the source of bleeding is not in the tumour itself, but in the membrane investing it, adopts the following method. If the polypus is low down, he seizes the membrane with his finger and thumb, and pulls it off; "in a word, he peels the polypus." The hemorrhage is checked, and does not return "after this little operation." If the polypus be too high to be thus treated, he seizes it with hooks, and through a large speculum, after stopping the temporary bleeding by cold and astringents, he sponges its whole surface with the acid proto-nitrate of mercury "on the instant the hemorrhage stops." By either of these means time may be gained for the patient to recover her strength, and be prepared for the operation of removing the tumour.

Bulletin Générale de Thérapeutique. Janvier, 1842.

On Iodine Injections in the Treatment of Serous Cysts. By M. VELPEAU.

M. VELPEAU was induced, by the success which attended the use of this means in the treatment of hydrocele, to adopt it for various kinds of serous cysts, enlarged bursæ, &c., about the knee, in the axilla, breast, neck, and other parts. The proceeding consists in puncturing the cyst with a trocar proportioned to its size, emptying it, and then injecting through the canula a mixture of one part of tincture of iodine with two parts of water. This having been retained for a few seconds, should then be nearly all drawn off again. The pain produced by this operation is generally inconsiderable, and ceases after about a quarter of an hour; a day or two after reaction takes place the cyst inflames, though never severely; in two or three days more, resolution commences, the cyst diminishes, grows pale, shrivels, and in two, four, or six weeks the cure is perfected. It is rarely delayed beyond this time, but it may be accelerated by rubbing the skin over the cyst with mercurial or iodine ointment when all the signs of acute inflammation in it have passed away.

Bulletin Général de Thérapeutique. Novembre, 1841.

MIDWIFERY, AND DISEASES OF WOMEN AND CHILDREN.

Case of Chronic Hydrocephalus occurring in a Boy nine Years of Age. By MM. BARTHEZ and RILLIET.

THE subject of this observation was a healthy child, and remarkably intelligent and quick of apprehension. At the age of seven years and half he had a severe fall, after which he frequently complained of pains in the back of his neck. It was not, however, until six months afterwards—in September, 1839—

that any more serious symptoms became apparent. At the end of September he could scarcely see to read, and when writing would frequently mistake one line for another. About the middle of October his gait became tottering, but no enlargement of the head was perceived before the middle of November. In January, 1840, his sight was almost entirely gone, and in March he became completely blind, and was forced to keep his bed by inability to walk. In April he began to pass his urine and feces involuntarily, and for three weeks had copious vomiting after every meal. The size of the head had gone on increasing ever since November, 1839; and in May, 1840, there came on a constant tremulous motion of the upper extremities. Notwithstanding the progress of the disease, the digestive and respiratory functions continued natural and the intellectual powers perfect, the patient recognizing persons by their voices. Leeches, setons, purgatives, and various other remedies had been employed from October, 1839 to August, 1840, when the child was admitted into the Hôpital des Enfans.

The head at that time measured 60 centimetres, about 23¾ inches, in circumference; 41 centimetres, or 16 inches, from the root of the nose to the occipital protuberance; and 39 centimetres, or 15 inches, from one ear to the other. The child lay on his back; his countenance was placid; the pulse 108, and regular. When spoken to, he answered slowly, but correctly, though not without hesitation. If spoken to suddenly, or at all excited, his upper extremities are seized with tremor; occasional rigidity of the fore-arm, and contractions of the thumb into the palm were likewise observed. He retained power, however, over the upper extremities, and could clench the hand firmly. He could move his legs, though unable to stand, or even to sit firmly. There was no pain along the spinal column.

Such was the condition of the child on the 7th of August, and this state continued up to the 20th, when he was suddenly seized with general convulsions, which lasted for an hour, when an interval of an hour occurred, after which they returned with increased intensity. At nine, p. m., the features were drawn to the left side, the fore-arms were rigid and bent, the fingers clenched, and the thumbs drawn into the palms, while the whole trunk was as stiff as a bar of iron. Sensibility was now completely abolished, and the child continued in this state, interrupted only by occasional convulsions, till eleven, p. m., when he died, nine hours after the first attack.

The bones of the cranium were found to be very thin; the brain was large, its convolutions were expanded, and its ventricles contained three fourths of a litre, 1¾ pint of limpid serum. The cerebellum was estimated to be a fifth larger than natural; the whole of the interior of its right lobe was in a state of softening, which condition exte .ded as far as the walls of the fourth ventricle, and the *tubercular quadrigemina*. In the midst of this softened tissue, which was white in some parts, and of a yellowish red in others, there were four or five tumours, the smallest of which was of the size of a lentil, the largest as big as a nut. Some of them were near the surface, others deep in the substance of the cerebellum. They were irregular in form, but slightly rounded, consisting of a dense elastic substance, of a blueish or dead white colour, and resembling the inter-articular fibro-cartilages. They adhered firmly to the softened cerebral substance, and one of them which was in contact with the dura mater could hardly be detached from it. The spinal cord presented a precisely similar lesion. A little below the cervical expansion of the cord, there was a patch of morbid structure, fifteen millimetres (half an inch) long, ten (one third of an inch) wide, and six (one fourth of an inch) thick. Externally it was firmly connected with the dura mater; internally it adhered at its centre to the medullary substance, from which, however, it was possible to separate it completely. The spinal cord in the situation of this tumour was twice as large as either above or below it; its substance was slightly red and softened.

The writers propose three hypotheses as to the origin of these tumours; either that they result from a degeneration of the tissue of the pia mater; or from

hypertrophy, with induration of the cerebral substance itself; or from an extravasation of blood either into the cerebral substance or the pia mater. They incline to the third supposition, and conceive that the alterations which a fibrinous clot may undergo would produce tumours similar to those described above. In confirmation of this view, they detail a case in which, in a child aged seven years, a tumour of this character was found in the immediate vicinity of several apoplectic cells.

Archives Générales de Médecine, Janvier, 1842.

Account of a Case of Extra-Uterine Pregnancy in which Gastrotomy was successfully performed. By MM. Mathieu and Bressolles, of the Hospital of La Charité sur Loire.

This case has given rise to disputes between MM. Mathieu and Bressolles, as to the share which each had in the performance of the operation. But, leaving these matters, and the opinions which M. Mathieu has expressed, apparently on insufficient grounds with respect to the membranes of the fœtus, the following particulars of the case may be of interest.

The woman was thirty-eight years old, and had given birth to three children by her first husband. After his death she married again, but three years had passed without any sign of pregnancy, when at the commencement of January, 1835, the flow of the menses became extremely scanty, and on the following month ceased altogether. The woman experienced other symptoms of pregnancy, the abdomen enlarged, and about the middle of June the movements of the child became perceptible, and continued at intervals till the beginning of November. Pains like those of labour then came on, the patient experienced a sensation as of some violent tremulous motion of the fœtus, followed by three smart shocks, after which all movements ceased, and she supposed that the child had died.

During the three weeks preceding this occurrence the patient had suffered severe pains, which led her to think that labour was coming on. Several midwives and some medical men were sent for, who coincided in the opinion that the case was one of extra-uterine pregnancy; and the latter, according to M. Bressolles, suggested the performance of gastrotomy to which, however, the husband would not consent.

During the next six months, the patient's condition grew more and more intolerable. She had frequent attacks of colic; vomiting, usually of a bilious fluid, and obstinate constipation, which could be relieved only by frequently repeated injections. She could obtain no rest, was subject to a constant fever, fainted often, was much distressed by the sensation of something rolling about in her abdomen; and latterly, ascites and œdema of the extremities had supervened. Some of the more alarming of these symptoms subsided, but the patient still suffered much pain, and became daily more and more emaciated, which circumstances induced her to apply at the hospital.

At the time of her admission the abdomen was so much distended by fluid that it was necessary to perform paracentesis, in order to ascertain the patient's real condition. It was then placed beyond all doubt that a fœtus was contained in the abdomen, that its head was situated in the hypogastric region, while the feet could be felt at the right side. Besides this a tumour was felt in the epigastrium which pushed the xiphoid cartilage forward, but the nature of this growth it was not possible to determine.

On the 27th of August, 1836, fifteen days after the patient's admission into the hospital, M. Mathieu proceeded to the operation, by making an incision from the umbilicus to the pubes in order to remove the child, which was about nineteen inches long, and had undergone no change, except the separation of a little hair from the temples. The hand was next introduced to remove the placenta, which adhered to the right iliac fossa, but it was not found possible to abstract more than a few portions of it. The incision was now enlarged up-

wards, and M. Bressolles, who had removed the placenta, detached the epigastric tumour by means of a pair of curved scissors. It was found to be attached to the diaphragm close to its insertion into the sternum; it was of an oval form, as large as the head of a fœtus at the sixth month, and quite free from all connexion with the stomach. Its parietes were cartilaginous; it contained steatomatous matter and hair, and a small portion of bone, which M. Mathieu describes as resembling a fœtal bone, though the existence of any such similarity is totally denied by M. Bressolles.

The edges of the wound were brought together by suture, and a pledget of lint placed at its lower angle to facilitate the escape of any purulent matters from the abdomen. The patient recovered without a single bad symptom; the very copious purulent secretion from the abdominal cavity was the most remarkable feature in her convalescence. When she left the hospital a small fistulous opening existed at the lower part of the wound, but when the patient was seen again on June 20, 1837, this had closed and was succeeded by another close under the umbilicus. At this time her health was good; she had gained flesh, and could rest in any posture, though she experienced a dull pain in the right iliac region whenever she stood or walked. There was no hardness in the epigastric region, and the abdomen generally was soft.

Menstruation had occurred for the first time after the operation on May 1, and had reappeared on the 1st of June.

MM. Capuron and Gerdy, in their report on the case to the Academy of Medicine, have collected thirty-three other observations of extra-uterine pregnancy, to which we refer the reader. We cannot conceal our regret that the details of so interesting an observation should be disfigured by the squabbles of men who might have been expected to carry into the exercise of their profession higher motives than those of a vulgar and selfish appetite for distinction.

Bulletin de l'Académie Royale de Médecine. Sept. 30, 1841.
and *Annales de la Chirurgie. Sept.* 1841.

On Inflammation of the Mucous Follicles of the Vulva, and its Treatment.
By M. A. Robert.

This affection frequently accompanies blenorrhagia, or occurs in women who suffer from sub-acute inflammations of the mucous membrane of the uterus, or is induced by pregnancy or abortion, or appears as a consequence of derangements of the menses. The chief seat of the inflammation in these cases is to be found in those two large mucous follicles situated at the entrance of the vagina, and known by the name of the glands of Duverney or of Bartholinus.

Its chief symptoms are a darting pain and distressing pruritus at the vulva, aggravated by all the patient's movements, and especially by sexual intercourse. Considerable redness is observable at the entrance of the vagina; sometimes especially obvious at the two points which correspond to the openings of the mucous follicles, from which pus can usually be squeezed by slight pressure.

The nature of the affection is frequently mistaken by practitioners, who sometimes attribute the itching to the irritation of the mucous membrane of the vagina from habitual leucorrhea; others conceive it to be a form of porrigo, or look on it as the consequence of syphilitic infection. Nothing, however, is easier than its cure when the real nature of the affection has been ascertained. It consists in introducing one of Anel's stylets into the follicle, then laying its cavity open by means of a pair of probe-pointed scissors, and cauterizing its internal surface with nitrate of silver. The operation, though painful, is never dangerous, and is always succeeded by a complete cure, provided the whole of the follicle has been destroyed, but when this has not been effected, a repetition of the operation may become necessary. Some cases are detailed in illustration of the benefits of this procedure, where the patients had suffered from the affection for years, and undergone a variety of treatment without effect.

Bulletin Général de Thérapeutique. Sept. 30, 1841.

On the Pulse of Infants at the Breast. By Professor Trousseau.

The following are the results of the observations of M. Trousseau:

In children in the first weeks of life the pulse varies, according to Billard and Trousseau, from 78 to 150; according to M. Valleix, from 76 to 104 only; at a more advanced age according to the observations of M. Trousseau,

In the second half of the first month from	120	to 164
From one to two months . . .	96	132
,, two to six	100	162
,, six to twelve	100	160
,, twelve to twenty-one . . .	96	140

It is a little more frequent in girls than in boys after the first two months. In children from fifteen days to six months the pulse is 180 when awake, 121 during sleep. In children from six to twenty-one months 128 when awake, 112 during sleep. Thus when in a sleeping child we find the pulse at 140, and in a wakeful 150 or 155, we may generally suspect that fever is present.

L'Examinateur Médical. Août 29, 1841.

Extirpation of a Diseased Ovary. By Dr. Stilling, of Cassell.

The patient, an unmarried female, 22 years old, had always enjoyed good health, with the exception of a tumour which had been growing for three years and a half in the right side of the abdomen. This tumour occasioned her so much inconvenience, that she determined to undergo any operation which might be necessary for its removal.

April 30th, the patient being placed on the operating table at 8 a.m., an incision was made four inches in length, from the umbilicus downwards in the direction of the linea alba. The tumour was now punctured, and gave exit to a tenacious, gelatinous matter of a yellow colour. It was found that the tumour was divided by septa, so that it was necessary to puncture several cysts before its size was reduced sufficiently to allow of the completion of the operation.

The incision was somewhat enlarged by cutting for two inches above the navel, and the tumour was then drawn forwards by hooks. It was about the size of a man's head, and was formed by the right ovary, which was connected with the uterus by the broad ligament, and by a bundle of vessels about the thickness of the finger. A strong, double, silk ligature, was placed round this pedicle by means of a needle, and its ends were firmly tied on either side. The pedicle was now cut through; and the tumour, which was not adherent to any other organ, was removed without the loss of any blood. The ovary weighed six pounds, and the contents removed from it during the operation were found to weigh eighteen pounds.

Four sutures were applied, a bandage passed round the abdomen, and the patient removed to bed, the operation and dressing of the wound having occupied three quarters of an hour.

During the operation no untoward accident happened, and the patient's condition was very satisfactory for twenty-four hours afterwards. Symptoms of peritonitis then came on, which were checked by venesection, but the patient continued restless and feverish during the second night after the operation, and was much troubled by retching and occasional vomiting. Attempts were made to induce action of the bowels by purgative pills, but their only effect was to induce vomiting. At midnight about six ounces of blood escaped through the bandage, and for a time the pulse became extremely frequent. On May 3, the patient was evidently much worse, the pulse was almost imperceptible, vomiting incessant; she complained of singing in the ears, and of great oppression at the chest, and the same day at half-past eleven she died.

A considerable quantity of blood flowed from the wound in carrying the body to the room where the post-mortem examination was made. A small quantity of coagulated blood was found in the right iliac region, and appeared to have escaped from the pedicle, to the cut surface of which coagulated blood was adhering. It seems therefore that the ligature, though tight, was insufficient to prevent hemorrhage. The peritoneal coat of the anterior part of the uterus

was inflamed and covered with lymph. The peritoneum around the wound seemed slightly inflamed, but all other parts of the body were perfectly healthy. *Holscher's Hannoversche Annalen.* Heft iii. 1841.

Injury to the Head of the Child during its passage through the Pelvis in labour.
By Dr. Schöller, Assistant at the Lying-in-Hospital, Berlin.

A healthy woman, pregnant for the first time, fell in labour on Aug. 23, 1839. The first stage of parturition proceeded extremely slowly, and the passage of the head was evidently retarded by smallness of the pelvis. At the end of three days, and after the employment of venesection and opium, a male child, weighing 6½ pounds, was born. The infant appeared to be in a state of asphyxia, but from this it speedily recovered.

The head was a quarter of an inch smaller than natural in every diameter; a large *caput succedaneum* occupied the right parietal bone, and in the middle of the left parietal bone, and in the neighbourhood of the left temple the skin was abraded and the bone depressed. The skin about these parts became gangrenous, and a red line of demarcation surrounded the mortified structures. The bone beneath likewise died, and a portion as large as a sixpence of the whole thickness of the parietal bone exfoliated, leaving the dura mater exposed. The destruction of the frontal bone was less considerable, and was replaced by granulation, which, on Sept. 13, had likewise advanced so far towards restoring the lost portion of the parietal bone, that the child was dismissed from the hospital. *Medicinische Zeitung. Sept.* 22, 1841.

Spontaneous Inversion and gradual Replacement of the Uterus.
By Dr. Borggreve, of Westphalia.

The inversion of the uterus was detected on the third day after the delivery of the patient, a young primipara. It had not occurred during the labour, but at what time or in what manner it took place was not clearly known. The uterus was protruded nearly an inch from the external orifice of the vagina, and its mouth was carried high up. Its form was that of a long flask, for its orifice was completely contracted. Efforts were made to replace it, but they were useless and produced intolerable pain. Ether and opium were therefore administered, anodyne injections were thrown into the vagina, and a sponge was kept in it to prevent the complete descent of the uterus. The patient had frequent syncope, her voice was scarcely audible, her pulse thready, and her countenance deathlike. A fresh attempt at replacement only proved the impossibility of affecting it, for the os uteri was as much closed as ever, and the endeavour produced syncope and convulsions. The urine which had been retained ever since the uterus was inverted, was daily drawn off. Repeated bleedings taking place, the author determined to try to effect an invagination of the uterus so as to diminish its volume, and give a passage to the urine, and perhaps to reinvert it if the peritoneal surfaces had not already become adherent. For this purpose he had a staff eight inches long made, with a knob of the size and form of a hen's egg at one extremity. Then, having with the end of the thumb pressed the fundus of the inverted uterus as far as possible back into the cavity, he introduced the knob of the staff into the depression thus formed, and fixed the other end of it by a moderately tight ⊤ bandage. After this the woman had but little pain; in the evening her urine passed freely and all bleeding had ceased. On the sixth day after delivery, and the third after the introduction of the staff, the author withdrew it, and cleansed the vagina. The fundus uteri had already been forced two inches upwards; the knob of the staff was therefore again placed in it, and the rest of it fixed as before. Next morning, after a good night's rest, the uterus was found completely replaced. The os uteri was low down, scarcely an inch and a half from the external orifice, and surrounded the staff. The latter being withdrawn, the patient's strength rapidly increased; in a few days she was completely restored, and several months afterwards, no local disorder could be discerned.

The author mentions as the peculiar advantages of this plan that, by the pressure of the knob of the staff, all the hemorrhage which usually comes from that part of the inverted uterus to which the placenta was attached, is at once checked, and the free passage of the urine is permitted; if there be any spasmodic contraction of the os uteri, it is removed by the permanent pressure on the fundus; and if, as the consequence of inversion of longer standing, the orifice of the uterus is more fixedly contracted, it is dilated, and the complete replacement is by this method permitted to take place naturally and in the most speedy manner possible. *Medicinische Zeitung. Juni* 9, 1841.

On the Employment of a Ring for retaining the Womb in Cases of complete Prolapsus Uteri. By Dr. DOMMES, of Hanover.

IN cases where the vagina is too irritable to bear a pessary, or where pessaries have been tried without success, or where extensive and incurable laceration of the perineum exists, Dr. Dommes has resorted with success to the following method:

The patient is seated on a table with the thighs separated; and, after the uterus has been returned, a trocar is thrust through each labium, in the situation of the posterior commissure, from within outwards, and about four lines from its outer edge. Through this wound a leaden wire about four inches long is passed, and its ends are twisted together so as to retain it in its place. The object of this is to prevent the perforations from closing, and, as soon as the swelling of the parts has subsided, and the wound healed, which generally occurs in the course of a few days, a silver ring is substituted for the leaden wire. This ring is about the size of a sixpence, it opens and shuts with a hinge, and the two ends fit into each other, and are kept closed by a little collar which is made perfectly smooth. Dr. Dommes details the case of a person who had a very extensive laceration of the perineum, and a prolapsus uteri before deemed incurable, but who, after employing this ring, married and became pregnant; and he states that he has met with similar success in other cases. He suggests that in any case where the laceration of the perineum is very extensive, it might probably be advisable to employ two rings instead of one.

Hannoversche Annalen. Bd. v. Heft 1.

On the Treatment of Croup by frequently repeated Emetics. By Dr. MAROTTE, formerly Interne of the Hospitals of Paris.

A paper on this subject by M. de Larroque, which appeared in the Bulletin Général de Thérapeutique for September, 1840, led the writer to resort to this mode of treatment. The emetic which he employed consisted of the tartrate of antimony in large and frequently repeated doses. He does not, however, attach so much importance to that preparation as to the emetic effect which follows the administration of many other medicines besides tartar emetic. The employment of local depletion, carried so far as to cause some faintness, has appeared to Dr. Marotte to be very beneficial, and to favour the subsequent operation of the emetic. Neither the dose of the medicine, nor the times for its repetition can be regulated by any fixed rule; but the former may require to be increased and the latter to be rendered more frequent, according to the urgency of the symptoms. Vomiting should be kept up until a marked influence is produced on the cough and respiration, and must be repeated as often as the symptoms appear about to return. The fear of exciting gastritis Dr. Marotte treats as groundless; and details three cases in proof of the good results of the emetic plan of treatment, and its freedom from evil consequences.

[In Vol. IX. p. 573 of our Journal will be found an abstract of a paper by Mr. Wilson, on the treatment of croup by large doses of tartar emetic. That gentleman, however, was of opinion that the antimony produced a beneficial effect, independent of its emetic action. In other respects, however, the views of Mr. Wilson closely coincide with those of Dr. Marotte.

Gazette Médicale. Janvier 1, 1842.

ANIMAL CHEMISTRY AND PHARMACY.

Remarks on the Memoir of Dr. Dupasquier, on the Protioduret of Iron, with new formulæ for the preparation of this remedy. By M. F. Boudet.

M. Boudet objects to M. Dupasquier's formulæ, that, according to his method, the protioduret of iron always requires extemporaneous preparation, and that the quantities of the medicine contained in the different preparations of it are very small and fractional, so as to occasion considerable difficulty in calculating their doses. He therefore suggests the following as an officinal preparation, which contains one part in ten of protioduret of iron:

		Parts.
Take of pure iodine,	by weight . .	8½
,, Iron filings	,, . .	4
,, Distilled water	,, . .	40
,, Best white sugar	,, . .	55
,, Gub arabic, in powder	,, . .	8 = 115½

Mix the iodine and thirty parts of water together in a glass flask, add the iron filings gradually, shaking the mixture all the time, heat it slightly until the liquid has become nearly colourless; then filter, letting the filtered liquid drop into an iron capsule containing the sugar coarsely powdered. Wash the filter with the ten remaining parts of water, and dissolve in it the gum; pour this solution into the capsule, and expose the whole to heat till reduced to 100 parts, each of which will contain a tenth part by weight of pure protioduret of iron.

This solution may be preserved, without fear of decomposition, in a well-stopped bottle.

Prescriptions are given for various preparations which may be made from it. It will keep without changing for twenty-four hours in a mixture, provided that contain a tenth of its weight of syrup.

Syrup of protiodide of iron.	Parts.
Officinal solution of protiodide of iron . . .	20
Syrup of gum	220
Syrup of orange flower	60 = 300

[The above formulæ will, we are sure, be welcome to all who are in the practice of employing this valuable preparation, the only objection to which has been the readiness with which it becomes decomposed.]

Bulletin Gén. de Thérapeutique. Sept. 30, 1841.

MEDICAL STATISTICS.

Results of Revaccination in the Prussian Army in the year 1840. By Dr. Lohmeyer.

In the last year there were vaccinated in all the regiments together, 43,522 individuals. On these the cicatrices from previous vaccinations were

distinct in . .	34573
indistinct in . . .	6177
not discernible in .	2772

The pustules produced by the present vaccinations were

regular in their course in . .	20952
and irregular in	8820
and no effect at all was produced in	13750

The vaccinations that had thus taken no effect were repeated

with success in . .	2831
without success in .	8958

The numbers of genuine pustules produced were as follows:

1 to 5	in	10021
6 to 10	in	5875
11 to 20	in	4171
21 to 30	in	885

Of those who had been successfully vaccinated in 1840 and previously there were attacked during the past year with varicella . . 7
with varioloid . . 2
with true variola . 1

In the past year more frequently than in any other, the vaccination was performed with lymph taken from genuine and regular vaccine pustules on adult persons; for past experience has consequently led military practitioners to be more strongly convinced that for the vaccination of adults lymph taken from adults is to be preferred to that taken from children, and that it produces a more powerful reaction and more strongly-developed pustules. And that the pustules thus produced do actually protect from the contagion of smallpox is proved by this, that in the 4th corps, in which the plan has been long followed of vaccinating adults with lymph taken from good pustules in other adults, there has not occurred during three years a single case of any variety of smallpox among those in whom the vaccine pustule ran its ordinary course, nor more than one case among those who were unsuccessfully revaccinated, although smallpox was constantly more or less rife in the neighbourhood in which the corps was quartered.

The results of past years have shown a regularly increasing ratio in the proportion of successful vaccinations to the number altogether vaccinated; and this increase has continued in the year 1840, for of 43,522 revaccinated, 20,952 have exhibited genuine and regular pustules. Of all the revaccinations, therefore, 48 per cent. were successful; while in 1839 the proportion was only 46, in 1838 and 1837 only 45, in 1836, 43, in 1835, 39, in 1834, 37, and in 1833 only 31 per cent. The proportions varied in 1840 between 40 per cent. and 60 per cent. in different regiments.

With respect to the advantage of revaccination as a preventive of smallpox, the experience of 1840 proves it in a striking manner; for during that year there occurred only 74 cases in the whole army, and of these 46 were cases of varicella, 21 of varioloid disease, and only 7 of genuine smallpox. Of the last 2 proved fatal; and neither of the patients had been revaccinated after his enlistment. In general, just as in former years, most of the cases of spurious and genuine smallpox occurred in recruits soon after their enlistment and before they had been revaccinated. Of those who had been revaccinated it has been already stated that only 10 were affected, and of these 7 had varicella, 2 varioloid disease, and only 1 genuine variola.

Medicinische Zeitung. April 21, 1841.

Results of the Revaccination in the Hanoverian Army in the Years 1837-8-9. From the Army Medical Reports. By Dr. MÜHRY.

SINCE the year 1837 revaccination has been practised in the Hanoverian army, and to such an extent as to include not only those who bore unsatisfactory cicatrices of former vaccinations or none at all, but all without distinction, and then annually all the recruits. The results, with respect to the susceptibility of the influence of the vaccine matter, were as follows:

In 1837 there were revaccinated, 4610, of whom 351 bore no cicatrices of the former vaccinations.
Of these the vaccination was completely successful in . . 506
incompletely in . . . 916
without influence in . . . 3188
In 1838 there were revaccinated, 2699, of whom 187 bore no cicatrices.
Of these the vaccination was completely successful in . . 268
incompletely in . . . 661
without influence in . . . 1770
In 1839 there were revaccinated 2057, of whom 143 had no cicatrices.
And of these the vaccination was completely successful in . . 294
incompletely in . . . 578
without influence in . . . 1175

The whole results, therefore, were as follows, that revaccination in 9366 persons, of whom 681 had no cicatrices, was successful in 1068, or in 11 per cent.; and partially successful in 2155, or in 27 per cent.

The persons revaccinated were for the most part between twenty and twenty-one years old, except in 1837, when about half of them were more or less further advanced in age. The number of punctures was from eight to sixteen. The matter was chiefly taken from the children* of the married soldiers, and conveyed direct from arm to arm; and when these sources of supply were insufficient, lymph was obtained from children in private practice, or dry lymph was used, or the lymph from those who had been successfully revaccinated. The success was considered complete when on the seventh day there was a pustule with a central depression, clear lymph, and an areola. Between that and the mere healing of the puncture there were a variety of intermediate forms, of which papillæ with red margins were reckoned among the cases with no result, and pustules which had crusts formed on the seventh day were reckoned among the incompletely successful cases. The revaccinated were not excused from service unless they were feverish, but that rarely occurred.

On a comparison of these results with those obtained in the Prussian army, and in Wurtemberg, both in the army and among civilians during an epidemic of variola, Dr. Mühry points out that the proportion of perfectly successful cases varied in some measure. In the Hanoverian army it amounted to more than $\frac{1}{10}$, in the Prussian army it was about $\frac{1}{4}$; in Wurtemberg, in the army, about $\frac{1}{3}$, among civilians nearly $\frac{1}{2}$. The proportion of imperfectly successful cases on the contrary was greatest in the Hanoverian army. In it, it was more than $\frac{1}{4}$, in the Prussian army $\frac{1}{8}$, in the Wurtemberg army less than $\frac{1}{4}$, and in the people $\frac{1}{3}$. Taking however the completely and incompletely successful cases together, the results were nearly the same in all, the proportions being in the order followed above, $\frac{1}{3}$, $\frac{3}{5}$, $\frac{3}{5}$ and rather more than $\frac{3}{5}$.

Among the confirmations which this report affords of the conclusions arrived at by Professor Heim (Historisch-kritische Darstellung der Pockenseuche) are the following: The cicatrices of former vaccinations afford neither by their number nor by their characters any indication of what will be the result of revaccination. A repetition of revaccination after previous failures not unfrequently produces a complete or incomplete result. The lymph of good pustules after revaccination is in no degree inferior for the purpose of revaccination to the lymph from children. In those who have had variola the susceptibility of revaccination exists in no less a degree than in those who have been vaccinated; for of 112 pitted with smallpox, 16 received complete revaccination, 21 incomplete, and 75 none at all, that is, in nearly the same proportion as among the vaccinated. On the contrary, it appeared that after varioloid disease scarcely any were susceptible of revaccination; for of 34 such who were revaccinated, one only showed any result, and that was imperfect, affording an additional proof that variolois is an actually varioloid disease, a revariola.

Hannoversche Annalen. Heft ii. 1840.

Statistics of Suicide in France.

The following are the numbers of suicides throughout the whole of France during the last four years, but the numbers are not exactly correct, as many doubtful cases of suicide are ranged, according to the wishes of friends, among accidental deaths:

1836	2,310
1837	2,413
1838	2,556
1839	2,717

The number has thus been increasing annually.

Gazette Médicale de Paris. Aout 7, 1841.

* Compare on this subject the remarks in the Report of the Results of Revaccination in the Prussian Army, in which adults were vaccinated with matter from other adults.

II. THE BRITISH JOURNALS, &c.

ANATOMY AND PHYSIOLOGY.

Case of Paralysis of the Portia Dura, illustrative of a curious physiological fact. J. Ward, a marine, aged 33, came to the poorhouse with secondary syphilis, for which the ordinary treatment, consisting of an alterative course with sarsaparilla, was successfully used. But upon the subsidence of the syphilitic symptoms he was suddenly seized with a paralysis of some of the muscles of the face. His mouth was drawn to the left side, the natural power of winking his right eye was lost, and he could not elevate the right angle of his mouth. As the senses of smelling, sight, hearing, the motions of the eyeball, the motions and taste of the tongue, and the motion of the lower jaw were perfect on both sides, the paralysis was evidently confined to the portia dura of the right side.

But the most curious part of the case, and that for which I have been induced to relate it, is, that he could close the eyelids at will, while the involuntary winking was confined to the left eye, showing that the voluntary power of closing the eyelids is communicated by means of a different nerve from that which causes the natural winking, the latter depending upon the portia dura, while the former is probably derived from the ophthalmic nerve.—Dr. Zabriskie, *American Journal of the Medical Sciences*, No. iv. *Oct.* 1841.

Minute Anatomy of Fatty Degeneration of the Liver. The author observes that in order to make the subsequent description intelligible, he will premise a few words on the minute structure of the lobules of the liver.

Mr. Kiernan has well described the *vascular element* of these minute representatives of the organ. It consists of a capillary plexus intervening between the portal and hepatic veins. The diameter of the capillaries in this plexus is very large, being nearly twice that of a blood-globule; while the diameter of the capillaries in most other textures is the same as that of the blood-globule, and in some (as muscle) even less, so that the blood-globules only pass along by undergoing elongation. This large size of the capillaries of the liver, probably, has reference to the deficiency of propelling power in the portal circulation. This *portal hepatic plexus* may be termed *solid*, as it is extended in all directions, and presents areolæ of nearly the same dimensions in whatever plane it is cut. These areolæ are in general not larger than the diameter of the vessels which form them, so that a well-injected specimen might appear to be composed of little else than vessels.

In the interstices of this capillary plexus lies the *secreting portion of the bile-ducts*. If a thin section of an uninjected lobule be examined with a sufficient magnifying power, it is seen to be almost entirely made up of small, irregular, angular particles, each containing a circular or oval nucleus, within which is a minute point or two, the nucleolus. These particles have a determinate outline, are of some thickness, and possess a fine granular aspect. They also contain (which is very remarkable) one, two, or more globules of fatty matter, irregularly placed, and of somewhat variable bulk.

The microscope at once reveals the seat of the *fatty deposit in the diseased state of the organ*. Instead of containing a few minute scattered globules, *the nucleated particles are gorged with large masses of it*, which greatly augment their bulk, and more or less obscure their nuclei.

This simple description develops the whole anatomical condition of the disease, as well as explains its rougher characters, the bulk, the colour, and the freedom of the circulation. The particles, lying in the interstices of the capillary plexus, enlarge slowly and equably, in such a manner as to exert no injurious pressure on the vessels, while their new contents impart that peculiar hue which characterizes the disease. It also throws no little light on the nature and source of the disease. It seems to show that the fat is an *increase of a normal constituent*, and not a for-

mation altogether unnatural in kind; thus distinguishing it from the fatty degenerations of other tissues, where fat is deposited in situations from which it is naturally absent. It likewise indicates an increased activity in the secreting action of the liver, for a considerable period before death, though why the *accumulation* of fat should occur within the nucleated particles does not so clearly appear. To explain that fully, will require a more complete knowledge than we yet possess, of the chemical affinities at play within these small laboratories of nature.—Mr. Bowman, *Lancet, Jan.* 1842.

On Fibre. The author observes that, in the mature blood-corpuscle, there is often seen a flat filament, already formed within the corpuscle. In mammalia, including man, this filament is frequently annular; sometimes the ring is divided at a certain part, and sometimes one extremity overlaps the other. This is still more the case in birds, amphibia, and fishes, in which the filament is of such length as to constitute a coil. This filament is formed of the discs contained within the blood-corpuscle. In mammals, the discs entering into its formation are so few as to form a single ring; and hence the biconcave form of the corpuscle in this class, and the frequent annular form of the filament it produces. In the other vertebrata, the discs contained within the blood-corpuscle are too numerous for a single ring; and they consequently form a coil. At the outer part of this coil, the filament, already stated to be flat, often presents its edge; whence there arises a greater thickness of the corpuscle, and an appearance of being cut off abruptly at this part; while in the centre there is generally found the unappropriated portion of a nucleus; and hence the central eminence, surrounded by a depression, in those corpuscles which, from the above-mentioned cause, have the edge thickened. The nucleus of the blood-corpuscle in some instances resembles a ball of twine, being actually composed, at its outer part, of a coiled filament. In such of the invertebrata as the author has examined, the blood-corpuscle is likewise seen passing into a coil.

The filament thus formed within the blood-corpuscle has a remarkable structure; for it is not only flat, but deeply grooved on both surfaces, and consequently thinner in the middle than at the edges, which are rounded; so that the filament, when seen edgewise, appears at first sight to consist of segments. The line separating the apparent segments from one another is, however, not directly transverse, but oblique.

Portions of the clot in blood sometimes consist of filaments having a structure identical with that of the filament formed within the blood-corpuscle. The ring formed in the blood-corpuscle of man, and the coil formed in that of birds and reptiles, have been seen by the author unwinding themselves into the straight and often parallel filaments of the clot; changes which may be also seen occurring in blood placed under the microscope before its coagulation; and similar coils may be perceived scattered over the field of view, the coils here also appearing to be altered blood-corpuscles, in the act of unwinding themselves; filaments, having the same structure as the foregoing, are to be met with apparently in every tissue of the body. The author enumerates a great variety of organs in which he has observed the same kind of filaments.

Among vegetable structures, he subjected to microscopic examination the root, stem, leaf-stalk, and leaf, besides the several parts of the flower; and in no instance of phanerogamous plants, where a fibrous tissue exists, did he fail to find filaments of the same kind. On subsequently examining portions indiscriminately taken from ferns, mosses, fungi, lichens, and several of the marine algæ, he met with an equally general distribution of the same kind or filaments. The flat filament seen by the author in all these structures, of both animals and plants, he states to be that usually denominated a fibre. Its appearance is precisely such as that of the filament formed within the corpuscle of the blood. It is known, he remarks, that discoid corpuscles circulate in plants; and it remains to be seen whether or not filaments are formed also in these.

By gradually tracing the fibre or filament above mentioned into similar objects of larger size, the author endeavours to show that it is not possible to draw a line

of separation between the minutest filament, and an object being to all appearance composed of two spirals running in opposite directions, and interlacing at certain regular intervals; an arrangement which produces in the entire object a flattened form, and gives it a grooved appearance. It is, in fact, the structure which, for want of a better term, he has called a flat filament. The edge of this filament presents what, at first sight, seem like segments, but which, in reality, are the consecutive curves of a spiral thread. A transverse section of such an object is rudely represented by the figure 8. This is also precisely the appearance presented by the minutest filament, generally termed fibre: and the author particularly refers to the oblique direction of the line separating the apparent segments in the smaller filament, in connexion with the oblique direction of the spaces between the curves of the spiral threads in the larger one.

The spiral form, which has heretofore seemed wanting, or nearly so, in animal tissues, is then shown to be as general in animals as in plants. Nervous tissue, muscle, minute blood-vessels, and the crystalline lens, afford instances in proof of this. And if the author's view of identity in structure between the larger and the smaller filaments be correct, it follows that spirals are much more general in plants themselves than has been hitherto supposed; spirals would thus appear, in fact, to be as universal as a fibrous structure.

The tendency to the spiral form manifests itself very early. Of this the most important instance is afforded by the corpuscle of the blood, as above described. The author has also obtained an interesting proof of it in cartilage from the ear of a rabbit; where the nucleus, lying loose in its cell, resembled a ball of twine, being composed at its outer part of a coiled filament, which it was giving off to weave the cell-wall; this cell-wall being no other than the last-formed portion of what is termed the intercellular substance—the essential part of cartilage. These nuclei in cartilage, as well as those in other tissues, there is ground for believing to be descended, by fissiparous generation, from the nuclei of blood-corpuscles.

The author then describes the mode of origin of the flat filament or fibre, and its reproduction in various animal and vegetable tissues, which he enumerates. He conceives that each filament is a compound body which enlarges, and, from analogy, may contain the elements of future structures, formed by division and subdivision, to which no limits can be assigned.

He then traces the formation of muscle out of cells, which, according to his observations, are derived from corpuscles of the blood, to the state where there exists what is denominated the fibril. In this process there are to be observed the formation of a second order of tubes within the original tube; a peculiarly regular arrangement of discs within these second tubes; the formation, first of rings and then of spirals, out of discs so arranged; the interlacing of the spirals; and the origin, in the space circumscribed by these, of spirals having a minuter size; which in their turn surround others still more minute; and so on. The outer spirals enter for the most part into the formation of the investing membrane discovered by Schwann, but for the only complete description of which, in a formed state, we are indebted to Mr. Bowman. The inner spirals constitute what are denominated the fibrillæ. The fibril appears to the author to be no other than a state of the object which he designates a flat filament; and which, as he shows, is a compound structure. The fibril he finds to be, not round and beaded, as it has been supposed, but a flat and grooved filament; the description above given of the structure of the filament being especially applicable here. This flat filament is so situated in the fasciculus of voluntary muscle, as to present its edge to the observer. It seems to have been the appearance presented by the edge of this filament, that is to say, by the curves of a spiral thread, that suggested the idea of longitudinal bead-like enlargements of the fibril, as producing striæ in the fasciculus of voluntary muscle. In the author's opinion, the dark longitudinal striæ are spaces (probably occupied by a lubricating fluid) between the edges of flat filaments, each filament being composed of two spiral threads, and the dark transverse striæ rows of spaces between the curves of these spiral threads. The filament now mentioned, or its edge, seems to correspond to the primitive marked thread or cylinder

of Fontana—to the primitive fibre of Valentin and Schwann—to the marked filament of Skey—to the elementary fibre of Mandl—to the beaded fibril of Schwann, Müller, Lauth, and Bowman—and to the granular fibre of Gerber. The changes known to be produced by the alternate shortening and lengthening of a single spiral are exhibited in the microscope by a fasciculus of spirals, not only in its length and thickness, but in the width of the spaces (striæ) between the curves of the spirals. And a muscle being no other than a vast bundle of spirals, it is in contraction short and thick; while in relaxation it is long and thin; and thus there occurs no flattening of bead-like segments in contraction. The author has found no segments that could undergo this change. These observations on the form of the ultimate threads in voluntary muscle were first made on the larva of a Batrachian reptile; and have been confirmed by an examination of this structure in each class of vertebrated animals, as well as in the crustacea, mollusca, annelida, and insects.

He finds that the toothed fibre, discovered by Sir David Brewster in the crystalline lens, is formed out of an enlarged filament; the projecting portions of the spiral threads in the filament, that is, the apparent segments, becoming the teeth of that fibre.

The compound filaments are seen with peculiar distinctness in the blood-vessels of the arachnoid membrane. In connexion with the spiral direction of the outer filament in these vessels, the author refers to the rouleaux in which the red blood-discs are seen to arrange themselves, in the microscope, as probably indicating a tendency to produce spiral filaments. To form rouleaux, corpuscle joins itself to corpuscle, that is to say, ring to ring; and rings pass into coils. The union of such coils, end to end, would form a spiral. But the formation by the blood corpuscles of these rouleaux is interesting in connexion with some facts recorded by the author in a former memoir; namely, that many structures, including blood-vessels, have their origin in rows of cells derived from corpuscles of the blood. The human spermatozoon presented a disc with a pellucid depression, each of the two sides of the peripheral portion of which was extended into a thread; these two threads forming by being twisted the part usually designated as the tail. The occurrence of two tails, observed by Wagner, is accounted for by the author by the untwisting of these threads.

The author has noted very curious resemblances in mould, arising from the decay of organic matter, to early stages in the formation of the most elaborate animal tissues, more particularly nerve and muscle. Flax has afforded satisfactory evidence of identity, not only in structure, but in the mode of reproduction, between animal and vegetable fibre.

Valentin had previously stated that in plants all secondary deposits take place in spiral lines. In the internal structure of animals, spirals have heretofore seemed to be wanting, or very nearly so. Should the facts recorded in this memoir, however, be established by the researches of other investigators, the author thinks the question in future may perhaps be, where is the "secondary deposit" in animal structure, which is not connected with the spiral form? The spiral in animals, as he conceives he has shown, is in strictness not a secondary formation, but the most primary of all; and the question now is whether it is not precisely so in plants.

In a postscript the author observes, that there are states of voluntary muscle in which the longitudinal filaments ("fibrillæ") have no concern in the production of the transverse striæ; these striæ being occasioned by the windings of spirals, within which very minute bundles of longitudinal filaments are contained and have their origin. The spirals are interlaced. When mature, they are flat and grooved filaments, having the compound structure above described. With the shortening of the longitudinal filaments ("fibrillæ") in muscular contraction, the surrounding spirals, and of course the striæ, become elongated and narrow; while in relaxation these changes are reversed.—Dr. Barry's *Paper, Proceedings of the Royal Society*, No. li. 1841-2.

[In consequence of the very great importance of the subject treated of in this paper, we give it in full.]

Asymmetrical Development. There was presented to the American Philosophical Society a lower jaw (fossil) belonging to the genus Tetracaulodon. This is remarkable for having a single alveolus for a tusk; this alveolus is on the right side, and there is not the slightest trace of a corresponding alveolus ever having existed on the other.—*Proceedings of the American Philosophical Society*, No. xix. *Oct.* 1841.

PATHOLOGY, PRACTICAL MEDICINE, AND THERAPEUTICS.

Partial Hypertrophy of the Heart. The Hon. Mr. R——, about 40 years of age, came under my observation some five or six weeks before his death. He was greatly emaciated—sallow in his complexion—and with extremely feeble circulation. The pulse was like a thread at the wrist, and the action of the heart was scarcely audible. The appetite was nearly wanting, and as food produced distressing feelings, he had long adopted a very rigid and abstemious diet, which probably tended to increase the emaciation. I examined him with the greatest care from head to foot, without being able to detect any lesion that could account for the progressive waste of flesh. The patient (if he could be called such) went direct to Leamington, and never took anything which I prescribed. He placed himself under Dr. Jephson, who gave favorable hopes to his family of ultimate recovery. A month's treatment, however, produced no amendment, and Mr. R. returned, with great difficulty, and in the most exhausted state to London, when he came again under my care. The emaciation was now at its utmost extreme, and as he could take very little nourishment by the mouth, he was supported by strong beaf-tea thrown up into the colon every eight hours. The pulse was now scarcely perceptible at the wrist, and the action of the heart inaudible in any part of the chest. He had no cough—clean tongue—intellects unclouded—and, after lingering about a week, he ceased to exist—pale and pulseless, like a person expiring of cholera

On dissection (by my son) twenty-four hours after death, all the organs and structures in the body, with one exception, were sound. On opening the chest, the lungs, on both sides, completely collapsed, leaving in view a heart of the most extraordinarily small dimensions. The pericardium was intimately glued to the heart, so as to be incapable of separation, so ancient and complete had been the adhesion. The heart itself was not more than half its natural size; yet its parietes (ventricular) were full an inch in thickness. This diminution of general size, with hypertrophy of the walls, had so encroached upon the cavities, that the left chamber could not contain more than three teaspoonfuls of blood! The consequence was, that at each ventricular contraction about one fourth of the normal or natural quantity of blood was discharged from the heart into both aortic and pulmonary system. The general emaciation of the whole body thus so very imperfectly supplied with the vital fluid, is readily accounted for. In respect to diagnosis during life, I conceive that in a case of this kind, and to this extent, it would require more diagnostic means than we yet possess to detect the true nature of the organic lesion.—Dr. James Johnson, *Medico-Chirurgical Review*, No. lxxi. *Jan.* 1842.

Abscesses of the Lungs The following remarks (which are illustrated by several striking cases) are worthy of attention:

Though the introduction of the stethoscope has been of the greatest utility in the investigation of pulmonary complaints, both as regards their prognosis and their treatment, it must be confessed that, in many instances, practitioners have been induced unduly to rely upon the indications of disease which this instrument affords, and consequently have seen their prognosis fail. The following remarkable cases afford abundant proof, that patients may recover, contrary to the usual interpretation of the most significant and decisive stethoscopic symptoms, and therefore seem to merit publication, in order to warn practitioners from relying

too exclusively upon physical phenomena, and too hastily concluding that pulmonary lesions, however extensive, thus indicated, must necessarily prove fatal. These cases, too, show that vast abscesses may be formed in the lungs, and yet the patient recover; and likewise, that real circumscribed abscess occurs more frequently in the pulmonary tissue than Laennec allowed, or his followers seem to believe. It is true, indeed, that where suppuration takes place in the lung, nature effects it in a manner either calculated to afford the readiest exit for the matter so formed, or best suited to promote its absorption.

This object, from the extent of the parenchymatous structure of these organs, and its relation to the air-cells and minute bronchial tubes, is most easily effected, by so disposing of the purulent fluid, resulting from inflammation, that it can, on the one hand, be with facility eliminated through the bronchial tubes, or on the other absorbed in the texture of the lung itself. In other organs and other parts, a similar facility for mechanical elimination does not exist, and consequently the easiest step which nature can take is, to collect the puriform fluid, within the parietes of a circumscribed abscess, which may work its way outwards for the purposes of discharge. From this view it appears, that in other parts, circumscribed abscess is the ordinary means of evacuation provided by nature, and diffuse suppuration the exception; while in the lungs the reverse obtains, diffuse suppuration being the ordinary rule, and circumscribed abscess the exception. The rationale here exposed has been well explained by Dr. Stokes, in his admirable treatise on diseases of the lungs, but at the time he wrote, neither he nor I was aware that large abscesses occur so frequently in the lungs, or are so often recovered from, as subsequent observation has shown to occur.—Dr. Graves, *Dublin Journal of Medical Science*, No. lx. *Jan.* 1842.

Pyrosis from an Elongated and Depressed Ensiform Cartilage. The subject of this case, a man 39 years of age, had observed that he obtained relief from the pyrotic symptoms, on loosening the waist-belt or strap with which he supported his trousers. On examination, the ensiform cartilage was found exceedingly long and incurved. The man was not only aware of this peculiarity, but also of its influence in exciting his disease—in consequence of which, he was accustomed to bring the upper edge of the strap under the cartilage, which he could readily do, from his great emaciation. From frequent repetitions of this manœuvre, he had at length produced a complete dislocation of the cartilage, which could be felt lying loose in the epigastrium. His disease continues; and the reporter of the case is of opinion, that while the peculiar conformation of the ensiform cartilage was the original cause of the pyrosis, this affection is now independent, and will issue in structural change.—Dr. Bird, *Medical Gazette*, No. xi. *Dec.* 3, 1841.

Seat and Nature of Favus. Baudelocque supposed that the favous matter is deposited *under* the cuticle reflected into the hair follicle. Rayer believes that it is deposited *between* the hair and the cuticle. The author adopts the latter view, being satisfied that the favous secretion takes place *within* the follicle, but *upon* the cuticle lining it. So much for the *seat* of favus. As to the nature of it, he is of opinion that the matter of favus is a modification of tubercle; that it does not resemble lupus, which consists of small firm tumours; but that it is a disease, the essential characteristic of which is the deposition of that heterologous formation called tubercle.

Favus differs from pustular disease, with which it is often confounded, both in its elementary form, and in the qualities of the matter secreted. Favus is poured out on a free surface, not upon or within the cutis, and under the cuticle; which is always the case with pustule. Favus, in contradistinction to pustule, is chronic, and differs from pus in its solidifying immediately and independent of exposure to the air: it also differs in its chemical constitution.

On the other hand, favus agrees with tubercle, in the circumstance of its quickly

solidifying; in its growing by opposition, not intus-susception; in its tendency to assume an ovoid form: in its yellowish opaque white or grayish colour; in its chemical constitution; in the causes producing it, as per diet, and in its being hereditary.—Mr. Erichsen, *Medical Gazette*, No. xii. *Dec.* 10, 1841.

Bloodletting in Mania. The object of this paper is to prove the extreme rarity of the cases in which sanguineous depletion is justifiable in mania. The author observes, it may be asked, in what case is the abstraction of blood admissible? With regard to general bloodletting, I repeat that it is very rarely indeed that it can be either indicated or justified. Most of the cases, I believe, in which it has been tried with beneficial results, would, were we in possession of sufficient details, turn out to be cases in which there was inflammation of the brain or its membranes, of a more or less acute character; cases, in short, of encephalitis, in which some of the symptoms were perhaps slightly modified by accidental circumstances or individual peculiarities. Such cases occasionally find their way within the walls of institutions devoted to the treatment of the insane, and by the hasty or inexperienced observer may readily be mistaken for acute mania. There are, however, certain cases, both of mania and other forms of insanity, in which there is an evident congestion of the vessels of the head; where the pulse is firm; the pupil contracted; where everything leads us to believe that the congestion is of an *active* not a *passive* character; where there is no reason to fear a want of vascular tone or apprehend effusion; and in such cases the judicious application of leeches or the cupping-glasses is calculated to be highly beneficial. Even when the congestion is of a more passive character, and where the veins of the scalp are full, tumid, and tortuous, a very moderate and cautious employment of local bloodletting may be serviceable; although in this last case the safer expedient of dry cupping on the nape of the neck, and along the course of the spine, will be frequently found to answer the end as well.—Dr. Crawford, *Medical Gazette*, No. xv. *Dec.* 31, 1841.

Vaccine Virus. The author of this paper thus explains the fact of persons who have been vaccinated being attacked by smallpox.

The deterioration of the virus, I believe, never is the cause of failure. I have found that the want of success arises most frequently from operating before the pock is perfectly matured. Out of one hundred cases, I vaccinated fifty on the eighth day, and the remainder on the ninth. Of the first half I had to repeat the operation twice in seven cases, while in those done on the ninth day I had only to repeat it in one case: than which no stronger proof can be had of the advantage of having the virus of a proper consistence (not watery) before it is used —Mr. John Paterson, *Medical Gazette*, No. xv. *Dec.* 31, 1841.

Idiopathic Hydrophobia. A man, 24 years of age, subject to cardiac palpitations, having ridden fourteen miles, was seized with sudden dyspnœa, accompanied with pain at the region of the heart and in the chest. After a few minutes, these symptoms subsided, and the patient ate heartily at dinner, and was again attacked in the way described in the evening. He was now bled, first to the extent of ℥xviij, and soon after to ℥vj. The last bloodletting relieved him. The author of this paper saw him at five o'clock on the following morning, speechless, though conscious: convulsively tossing his arms: with a spasmodic constriction of the glottis and pharynx. He had at this time a great desire for water; but no sooner was this presented to him, than an alarming increase of pain about the pharnyx, with a dreadful feeling of suffocation supervened. These immediately left him on the water being withdrawn. The author, struck with these symptoms, questioned him closely whether he had been exposed to hydrophobic contagion: and the patient assured him he had not. Tenderness was detected at the lower part of the cervical region pressure at which point reproduced all the symptoms above described. A blister was then applied, which restored deglutition; the patient, after some further treatment, recovered.—Mr. Kimble, *Provincial Medical and Surgical Journal*, No. xv. *Jan.* 8, 1842.

Quinine in Intermittent and Remittent Fever. The author, if he sees the patient sufficiently early in the disease, invariably bleeds in the first stage, after which he places ten or fifteen cupping-glasses over the stomach, withholds all medicine; directs ice to be eaten *ad libitum;* and the patient's hands to be kept in ice. By these means, he tells us, he generally succeeds in converting the remittent into an intermittent, thus affording a more favorable opportunity for the administration of quinine. This substance he then orders in doses of ten or twenty grains; never troubling himself about previously unloading the bowels of the patient. When *tinnitus aurium*, which, according to him, characterizes the full effect of quinine, is perceived, he confidently expects a successful issue. The quinine he prefers giving in solution with tartaric acid; adding the latter to a solution of the former, in a tablespoonful of water, till the water becomes clear.—Dr Petherbridge, *Maryland Medical and Surgical Journal*, No. i. *July*, 1841.

Quinine in Agues. This paper, by another writer and in another American Journal, confirming the statements of the one immediately preceding, we quote the following numerical details:

Of the doses of medicine exhibited on the first day after being received on the sick report, and the character of the disease determined.—Five grains repeated in twenty minutes in *one* case; five grains repeated in thirty minutes in *one* case; ten grains repeated in thirty minutes in *one* case; ten grains repeated in four hours in *one* case; five grains morning, noon, and evening in *three* cases; eight grains morning, noon, and evening in *one* case; five grains morning, noon, and evening in *one* case; twenty grains morning, noon, and evening in *nine* cases; twenty-five grains morning, noon, and evening in *five* cases; fifteen grains morning, noon, and evening in *four* cases; forty grains morning, noon, and evening, *one* case. Number of cases twenty-eight.

Of the immediate effects of the medicine.—No unpleasant effects worthy of record followed the administration in *nineteen* cases. Nausea occurred, apparently in consequence, in *four* cases; vomiting in *one* case; headach in *four* cases; temporary deafness in *four* cases; giddiness, or dizziness, in *nine* cases; buzzing, or ringing in the ears, in *eight* cases.

Effects of the paroxysms.—In *nine* cases no paroxysm occurred after the first day of the administration of the specific; in *eleven* cases one subsequent paroxysm only occurred; in *five* cases two only occurred; in *one* case three occurred; in *one* four occurred, the last of which is recorded extremely light; in no case was the treatment unsuccessful.—Dr. Flint, *American Journal of Medical Science*, No. iv. *Oct.* 1841.

Morbus Brightii. Is there such a Disease? The author devotes part of a paper "on the treatment of various diseases," to show that Rayer, in his recent work on albuminuria, not only contradicts himself, but admits that there is nothing absolutely distinctive between common and albuminous nephritis: and that the alleged abnormal condition of the kidney is in some cases entirely unconnected with the supposed attendant alteration in the urine. After referring briefly to two cases, the one occurring in his own practice, the other in that of Dr. Lees, the author remarks: "while one of the preceding cases proves that we may have Bright's kidneys without albuminous urine, the other shows we may have albuminous urine without Bright's kidney: facts which, coupled together, militate strongly against the hypothesis, that the change in the structure of the kidney is connected with the appearance of albumen in the urine."—Dr. Graves, *Dublin Journal of Medical Science*, No. lx. *Jan.* 1842.

Non-identity of Smallpox and Cowpox. So long as the doctrine of the identity of smallpox and cowpox was put forward as an ingenious hypothesis, merely incapable of direct proof, but calculated to explain to the satisfaction of some persons the preservative powers of vaccination, the author was contented

to let the matter rest; but when the experiments of Mr. Ceely and of his indefatigable imitators on the Continent and elsewhere, are triumphantly referred to in support of the doctrine, and when it has been recently recommended to some of our highest authorities to abolish the term vaccination altogether, and instruct the poor that cowpox and smallpox are identical, the author thinks it indispensably necessary to sift the matter thoroughly. After some remarks designed to explain Mr. Ceely's experiments in a different manner from that in which this gentleman himself interprets them, the author remarks:

The vaccine of man has its own peculiar characters. So has that of the cow. Human vaccine occasions no specific febrile disturbance, and consequently throws off no contagious emanations. It is frequently followed by a peculiar lichenous eruption. Before it has, by frequent transmissions, assimilated itself to the human constitution, it does not show its true characters, but frequently occasions ugly eruptions, which, in the early periods of vaccination, were often taken for smallpox, and have even been designated as such in later times by those who ought to have known better. Its areola is circular, and does not commence until the eighth day. It has the power of preserving the human body, to a certain extent, from the assaults of variola. It can only be received once by the human body in a perfect form. It can (after a certain time) be perpetuated from man to man in an uniform state of intensity. It can be produced in man by no combination of common causes. It is producible in man by inoculation alone. The characters of vaccinia in the cow are in several essential respects different. The vaccine disease in cows can be generated by common causes. It acknowledges in them both a local and a constitutional origin. We have no reason to believe that the passing through this disease gives to the cow immunity from any other disease. Whether it can be received twice by the cow, in a perfect form, I am not aware; nor whether it can be perpetuated from cow to cow in similar states of intensity. The differences between vaccine and variola are still greater. The variolous vesicle advances with areola from the very first. It cannot be perpetuated from man to man in similar states of intensity. Its reception into the human frame, by the mode of inoculation, is always attended by more or less fever. When received by the respiration, the febrile disturbance is often excessive, and may even, *per se*, prove fatal. It throws off, however, generated contagious emanations.

Dr. Baron has stated (Life of Jenner, vol. i. p. 245,) as a strong argument in favour of the theory of identity, "that it is impossible to doubt that some of the inferior animals have been liable to smallpox;" and he quotes, with approbation, Dr. Layard's conjecture that the *pestis bovilla* of 1780 was really smallpox. Now, if cows are subject to smallpox, how happens it that the inoculation of cows with variolous matter does not produce smallpox? We know that it does not; and we further know, that it produces vaccine: from all which I conclude, not that smallpox and cowpox are identical, but just the reverse, that they are antagonist affections.—Dr. Gregory, *Medical Gazette*, No. xi. *Dec.* 3, 1841.

Gallstones. The following are the general conclusions to which the author's researches have led him.

1st. That females are more liable to these affections than males: the proportion as three to one, exclusive of Dr. Heyfelder's cases, 2 to 1.

2d. That the greater number are persons of melancholic and bilious temperaments, and are in the middle and upper ranks of life.

3d. That mental disquietude is a very frequent cause.

4th. That sedentary habits and good living, especially eating, also excite these maladies, and that they are most frequent between the ages of thirty and sixty.

5th. That fat people are not, as most authors assert, more subject to the disease than those of spare habit.

6th. That the use of fermented drinks operates but little in the production of the complaint. This opinion is strengthened by the circumstance of gin-drinkers being, I believe, less liable to these affections; as well as their greater prevalence

amongst females. In many of the cases the habits of the patients are not mentioned; but only two are described as intemperate.

7th. That these calculi may exist without producing but little, if any, inconvenience; and in the majority of cases there is no apparent structural change in the liver or gall-bladder.

In regard to treatment, the author, after noticing several methods in use, of the efficacy of which he appears to be sceptical, seems to confide principally in the salutary effects to be derived from air, exercise and regulation of diet, mental quiet, "stomachic" and alterative medicines, cold and tepid sponging, with frictions. He refers to Durande's celebrated remedy of which Dr. Copland speaks favorably, although the author distrusts Durande's own account of its success. The remedy consists of two parts of spirits of turpentine, and three of sulphuric ether, of which forty drops are to be taken every morning and during the passage of stones.—Mr. Crisp, *Lancet*, No. xi., *Dec.* 11, 1841.

Pseudo-morbid Appearances of the Brain and its Envelopes. By pseudo-morbid are meant those appearances which are not due to disease, but to physiological actions, which go on for some time after death; or which, at least, are very distantly and indirectly the consequence of the disease by which life is extinguished. The causes which operate in this way in the brain, giving rise to pseudo-morbid colorations and softening, are stated to be four: 1. Obstruction in the course of the venous circulation, occurring shortly before death. 2. Gravitation of the blood to the more dependent parts, the hyperemia by hypostasis of Andral. 3. Extravasal transudation or imbibition of the blood or of some of its component parts after death. 4. Spasmodic action of the muscular system, occurring towards the close of life.

The pseudo-morbid colorations are of two kinds, the spotted or the "injection sablée" of Lallemand, and the diffused or uniform; the former of which takes place chiefly in the medullary, the latter in the cortical substance. The former is the more frequent appearance, and much the more trustworthy as an indication of inflammation. It may result as a pseudo-morbid appearance from slow asphyxia, or from impediment to the circulation in the right side of the heart, or in the veins in the upper part of the body. It may happen from convulsions before closure of the fontanelles, or from muscular contractions in the body. When it occurs in particular parts of the brain only, or around an apoplectic effusion, the probability of the coloration being the result of true morbid action becomes strong. But on the *diffused* coloration, when surrounding apoplectic spots, the author is not disposed to place any reliance, as indicative of inflammatory action. Both *it* and a certain ramollissement, which often in such circumstances present themselves, being due to an absorbing action, which goes on in the substance of the brain for some time after death, and by which, more or less of the "extravasal exudation of the serum and colouring matter," are taken up. Orfila has seen pseudo-ramollissement, equally with the true, assume a variety of colours, as red, green, yellow, &c. Softening may be regarded as the result of *true* inflammatory action, when it is surrounded by a zone of red vessels, with small coagula, or when the softened portions are infiltrated with purulent matter.

In regard to the cerebral membranes, the author observes that there is one appearance very apt to be mistaken for actual disease or its result. This is opacity. But this appearance is in a great many cases due to simple distension of the membrane by subjacent fluid; on letting out which, the membrane itself is seen to be transparent. In like manner the cornea of either the living or dead eye may be made to look opaque, if distended by compression of the ball.—Dr. Patterson, *Edinburgh Medical and Surgical Journal*, No. 150, *Jan.* 1, 1842.

Paralysis from Visceral Disease. Ann Masters, ætat. 14, came to the Almshouse in 1837, with chronic diarrhœa, having a continual mucous discharge from the bowels. For this, many remedies had been used in vain. The diarrhœa

continued obstinately, and she gradually became very weak in her lower extremities, and at length powerless and benumbed, being completely paralysed; the sphincters lost their power of acting, making her a loathsome and disgusting object; the mental functions were perfect; she still retained sensation in her arms, the use of her tongue, and all the members of the upper half of the body; she gradually wasted away, and at length died. The following were the appearances upon dissection: Body much emaciated; legs very thin. The stomach presented some patches of red upon the lining membrane. The colon was also somewhat inflamed, but the great seat of the disease was in the jejunum. The whole jejunum was in a state of high inflammation, the vessels being strongly injected. The mucous membrane was disorganized and pulpy. The spine was particularly examined, but no disease could be observed in the vertebræ, in the spinal marrow, or in the nerves of the lower extremity, except that they were greatly reduced in size. No morbid condition was observed in the great sympathetic nerve or ganglia. All the other viscera were sound.

This case clearly shows an enteritis, accompanied with paraplegia, and the only lesion found, was an inflammation of the intestines, the mental faculties being perfect, and the spinal marrow, vertebræ, and nerves being sound.—Dr. Zabriskie, *American Journal of the Medical Sciences*, No. iv., *Oct.* 1841.

Perforation of the Stomach by a Worm. A female child, eight years of age, after having been slightly unwell on the 19th of January, and relieved by some mild treatment, was again seized on the 30th, with vomiting of large quantities of dark-coloured fluid. The stomach could retain nothing, and the child died the following morning at five o'clock.

Externally, the body presented a healthy appearance; on cutting into the peritoneum, the intestines were found "completely covered" by a large quantity of bloody serum; on removing which the first thing which presented itself was a large worm (ascaris lumbricoides) lying upon the omentum. On prosecuting the examination, the author found an opening in the anterior surface of the stomach, about two inches from the pyloric extremity. The whole surface of the peritoneum was deeply injected, and of a vivid redness.—Mr. Chambers, *Provincial Medical and Surgical Journal*, No. xxi. *Feb.* 19, 1842.

[Was not the real disease the common ulcerative perforation, the presence of the worm and its escape merely incidental?]

Leprosy and Leper Hospitals. This is a continuation of the elaborate paper referred to in our last. The number of quaint references and quotations is immense, evincing the erudition and laborious research of the author. The principal point established in the present part is, that as regards its nosology, British leprosy, both of more early and more recent date, is identical with the elephantiasis græcorum.—Dr. Simpson, *Edinburgh Medical and Surgical Journal*, No. cl. *Jan.* 1, 1842.

SURGERY.

Prolapsus of the Uterus and anterior Wall of the Bladder. A servant, aged eighteen, while violently exerting herself "heard her back crack," and immediately after felt a bearing-down sensation in the pelvis, and a dragging sensation in the loins. These symptoms, along with difficulty in voiding urine and feces, continued for ten days, when a small tumour, which gradually increased to the size of an orange, protruded from the vagina. Non-retention of urine and other consequences followed, which impaired the girl's health, and all means proving fruitless, it was resolved to perform the operation of episoraphie, as recommended by Dr. Fricke of Hamburgh.

Sept. 2. The bowels having been previously evacuated, and the hair removed from the parts, the patient was placed on a table, in the same position as for

lithotomy, without, however, tying the hands and feet. The thighs being well separated by two assistants, I took hold of the left labium and transfixed it obliquely about the middle with a narrow bistoury three-quarters of an inch from the edge, and in such a manner as to include more of the skin than of the mucous membrane; the knife was then carried rapidly downwards in the same direction to the raphe, half an inch or so in front of the anus; the superior attachment of this flap was next divided, by carrying the incision upwards as high as on a level with the meatus urinarius. The same was repeated on the opposite side; after which the frenulum, and other parts included within the angle formed by the union of the two incisions in front of the anus, were carefully dissected off. The two surfaces thus formed extended from opposite the urethra to within half an inch of the anus, each being about two inches long, and varying in breadth from an inch posteriorly to half an inch anteriorly. The hemorrhage was so trifling, as merely to require the torsion of one small vessel: the oozing having ceased, six strong hempen sutures were passed through the entire thickness of the denuded surfaces, and tied moderately firm. The first one was applied a few lines in front of the anus, and the last one immediately below the meatus urinarius.

The operation was performed in September, appropriate treatment was adopted, and by Nov. 20, the cure was complete.—*Lancet*, No. x. *Dec.* 4, 1841.

Wound of the Axillary Artery. The only point worthy of notice in this case (which terminated fatally), is its having furnished the reporter an opportunity of observing that, in the operation for tying the axillary artery below the clavicle, the axillary vein is not always, as is usually described, distended with blood, as to oppose an obstacle to the taking up of the artery; nor is the vein always easily recognizable, as is also alleged, by its peculiar colour. In the present case the vein was collapsed, and could not be distinguished either by protuberance or colour, from the fascia covering the vessels. The pulsation of the artery was felt distinctly through the vein; and the latter, had great care not been taken in detecting and avoiding it, might readily have been confounded with the fascia, and included in the incisions.—Dr. Scratchley, *Provincial Medical and Surgical Journal*, No. ix. *Nov.* 27, 1841.

Successful Operation for Prolapsus Uteri. The bladder being previously emptied, the patient was laid over a bed upon her face, and three large folds were excised from the posterior and lateral parts of the vagina. There was profuse hemorrhage, and great difficulty was experienced in securing the vessels. Ligatures kept the parts together, and there was ultimately a complete cure.—Mr. Morris, *Medical Gazette*, No. xiv. *Dec.* 24, 1841.

Dissection of a Case of Spinal Curvature. The object of this paper is to discountenance the operation of dividing the muscles in cases of spinal curvature. Even division of the sacro-lumbar fascia seems to be of little use in restoring the spinal column to the recto-linear state, and in the present case, an inspection of the bodies of the vertebræ and of the intervertebral substance, both of which had greatly lost volume on the concave side of the spine, made it evident that the obstacle to the bringing back of the column to the straight position, was what the author calls "organic," in other words, mechanical and structural; and such as the freest section both of the fascia and muscles could have had no effect in recovering.—Mr. Gay, *Medical Gazette*, No. xiv. *Dec.* 24, 1841.

New Treatment of Aneurism. The author, who has not yet had an opportunity of reducing his theory to practice, proposes that a needle be introduced into the aneurismal sac, and the coagulum broken up; the fragments of which becoming impacted in the discharging orifice of the sac, and the passage of blood being thereby arrested, there could be no doubt "but that the cavity would soon become obliterated."—Mr. Blake, *Medical Gazette*, No. xvi. *Jan.* 7, 1842.

COMPARATIVE MERITS OF AMPUTATION IMMEDIATELY BELOW THE TUBEROSITY OF THE TIBIA, OR AT OR BELOW THE MIDDLE OF THE LEG. The points insisted on in this able paper are, that we ought never to remove more of the leg than will ensure that the parts which form the stump are sound; on the principle that, *cæteris paribus*, the nearer the truuk, the more dangerous the operation: that, if provided with a suitable apparatus, namely, the pin which admits of walking being performed with the knee straight, the patient can make a much freer use of his stump in all positions, except the erect and recumbent, than if the operation had been performed immediately below the tuberosity of the tibia. The author cites the case of a sailor, on whom amputation of the lower part of the leg had been performed; and who, having had a hook attached to the forepart of his short pin, climbed the rigging nearly as nimbly as before he lost his leg.—Dr. ADAIR LAURIE, *Medical Gazette*, No. xviii. *Jan.* 21, 1842.

SUCCESSFUL CASE OF TRACHEOTOMY The patient, a female of fifty-five years, had suffered for two years from difficulty of breathing and of swallowing, and from pain referred to the site of the larynx. No evidence of disease in the lungs, heart, or great vessels existed to account for the attacks of dyspnœa, which at length became so urgent as to threaten life. The operation was performed on the 6th of December, with immediate relief; a small silver canula was introduced the same evening, and some auxiliary treatment adopted. On the 12th she could breathe freely through the natural passage. The cure was complete.—Mr. EWEN, *Provincial Medical and Surgical Journal*, No. xiii. *Dec.* 25, 1841.

PARAPHYMOSIS CURED WITHOUT OPERATION. The incision of the stricture in paraphymosis is pretty generally practised by surgeons, except when this disease occurs in children, and in such the reduction is often effected by pressure. I have seen repeated incisions fail of relieving the stricture, and leave foul and intractable sores, which have been extremely tedious and difficult to heal. I have always succeeded in reducing a paraphymosis, either in an adult or child, however long standing, without having recourse to the knife, by the following method: I place the patient against a wall, and take care that he is steadily supported by an assistant on each side; a piece of linen cloth is then laid over the glans, and with my thumbs I knead the blood out of it, drawing the prepuce forwards at the same time with two fore-fingers of each hand. A steady perseverance in this plan never fails, and, although the operation is a painful one, the patient is amply rewarded by the rapidity of the cure, which requires nothing more than the application of a saturnine lotion for two or three days. J. TOOGOOD, Esq., *Provincial Medical and Surgical Journal*, No. xvi. *Jan.* 15, 1842.

LIGATURE OF THE CAROTIDS. In this paper two points are insisted on: first, that, should circumstances demand the operation, both carotids may be simultaneously tied, without risk of ill consequences; and, secondly, that, after ligature of one or both of these arteries, the organ apt to suffer in consequence of the disturbance of the circulation caused by the operation is the *lungs* and not the *brain*. This is proved by the numerous experiments of M. Robèrt, performed on animals; the untoward symptoms which followed the operation developing themselves in the chest, and not in the cranium. The same fact is further illustrated by cases of Messrs. Ferguson, Liston, Lizars, Sir Astley Cooper, &c., which the author refers to, in which dispnœa and cough succeeded the operation, but which do not seem to have been properly understood, or to have attracted due attention or to have been treated, as the author thinks they ought to have been, by bloodletting. He therefore advises that, in plethoric subjects, the operation should be preceded by venesection; and that the same measure should be repeated after the operation, if any pulmonary symptoms supervene. He would extend the same rule and the same cautions to cases of operation on other great arterial trunks, such as the subclavians, the iliacs, and the femorals; after ligature of which, congestions of the thoracic and abdominal viscera are apt to follow. The author thinks that when,

after ligature of the carotid, cerebral symptoms do supervene, these are not due to the change in the circulation, but to some injury inflicted during the operation on the nerves or vein accompanying the artery, or to casualties attending the wound.—James Miller, Esq. *London and Edinburgh Monthly Journal of Medical Science*, No. i. *Jan.* 1841.

Closure of the Os Uteri. The case was that of a married woman, who had not menstruated since the birth of her last child, two years previously. On examination, the os uteri was found closed. It was punctured, and two pints of fluid gushed out, with immediate relief to the patient: two pints more came away soon after. It appeared, on enquiry, that, immediately after her last parturition, she had been seized with inflammation of the neck of the womb, and that the lochia had never appeared.—Mr. Pugh, *Maryland Medical and Surgical Journal*, No. i. *July*, 1841.

Strangulated Hernia treated with Opium. A man aged fifty, with a large inguinal hernia, was seized with symptoms of strangulation on the 16th of November. The taxis being employed without effect, the operation was proposed, which the man would not submit to. On the 19th another gentleman saw the case, who recommended the author to try large doses of opium, as, he said, Mr. Bransby Cooper had informed him of a surgeon in Somersetshire who for the last eighteen years had so treated similar cases. The author immediately gave four grains of opium, which relieved the pain and sickness, but produced no change in the tumour. In four hours he repeated the opium, and in five hours gave a third dose of four grains. On the 20th the patient was free from pain and sickness, though the hernia was in the same state. At length, however, the bowels operated, without any apparent alteration in the tumour; from which time he recovered, and the hernia gradually disappeared.

Another case, that of a woman aged seventy, is reported, which had an equally satisfactory result.—Mr. Cooper, *Medical Gazette*, No. xxii. *Feb.* 18, 1842.

Case of successful Operation for Lateral Curvature. The subject of this operation was a young lady aged nineteen, naturally of a good constitution, but rendered feeble and nervous by the deformity of the spine. Dr. Brown did not perform this operation in a manner precisely similar to that described by the European surgeons. He made the puncture on a line with the last dorsal vertebra, carrying the knife on its flat side between the integuments and muscles nearly to the spinous process of the same vertebra. He then turned it, and divided the longissimus dorsi transversely; again turning the instrument, he ran it down near to the spinous processes for the space of two inches, and then up along the course of the spine two inches, dividing the whole of the spinal attachment of the serratus posticus inferior, making a subcutaneous longitudinal incision of four inches, involving of course a division of the attachments of the latissimus dorsi at these points; all of which was done through one cutaneous puncture. There was no bleeding of any consequence—probably not more than a tea-spoonful. A small piece of adhesive plaster was applied over the puncture, which being secured by a compress and roller, the young lady walked to her bed. The deviation between the shoulder-blades, which previous to the operation was three inches, was reduced in four days to one inch and a quarter. Extension having been applied by means of the inclined plane used in the institution, the lumbar curve has entirely disappeared, and she has gained one inch and a half in height.—Dr. Browne, *Boston Medical and Surgical Journal*, No. xvi. *Nov.* 24, 1841.

Deformity from Rheumatism. Operation. The author of this paper found the patient, a young woman of 24 years, in the following condition: the elbow joints were completely anchylosed; the knee-joints were bent upon the thighs at

an angle of 45 degrees, were somewhat enlarged, and admitted but of slight motion; the muscles of both legs were atrophied.

From the circumstance of there being still motion left in the knee-joints, and as the chief obstacle to the action of these appeared to consist in the contracted and rigid state of the flexor muscles, the author divided by subcutaneous section, first, the semi-membranosus and tendinosus in the left leg, and then the biceps. A similar operation was performed on the right limb. Forty-eight hours from the operation, the wounds were quite healed, and splints with the revolving screw were applied. Eighteen days from the time of the sections, the apparatuses were removed, and the legs were quite straight. Ultimately the patient acquired a perfect use of her limbs. The case is interesting on account of the length of time during which the contraction of the joints had continued, which amounted to six years.—Mr. SYMES, *Medical Gazette*, No. xxiii. *Feb.* 25, 1842.

PROPRIETY OF OPERATING IN CASES OF SPREADING GANGRENE. The author gives a case illustrative of the propriety of amputation in case of spreading gangrene of the extremities.

Charles Tuck, a farm servant, aged 24, received the contents of a common fowling-piece in the hand, on Friday, the 4th of February, which passed up the flexor muscles and through the integuments of the fore-arm about three inches above the wrist. A neighbouring surgeon saw him soon after the accident, and directed cold applications and rest. On the following Monday he was admitted into the Bridgwater Infirmary. There was a ragged wound at each opening, the limb was but little swollen, and the only unfavorable appearance was, that the nails looked rather dark coloured. There was very little constitutional disturbance. He was put to bed, a poultice applied over the whole limb, and the usual treatment directed. On the next day the aspect of the limb was the same; but as there was more swelling in the evening and some heat, leeches and fomentations were ordered. He slept perfectly well until five o'clock on the following morning, Wednesday, when he was awoke by pain, which rapidly increased and became very severe. At seven o'clock the limb was found to be gangrenous to the elbow, and before his consent to its removal could be obtained, and the necessary preparation made, it extended so high up, as barely to leave room to amputate close to the shoulder-joint. There was no line of demarcation, but I cannot, at this distance of time, recollect the precise point to which the crepitus extended, but I am inclined to believe it was quite up to the joint, as it was debated whether it would not be the safest plan to remove the bone from the socket. Very little blood was lost during the operation; the constitutional irritation subsided in a few hours; the patient became tranquil and soon recovered.

The case proved fortunate, and the author very justly observes, that "it has always appeared to him better to offer to the patient the chance which a doubtful operation affords, than to leave him to certain death."—Mr. TOOGOOD, *Provincial Medical and Surgical Journal*, No. xxii. *Feb.* 26, 1842.

HYPERTROPHY OF THE PAROTID GLAND. This gland, in a child of 9 months, had attained an enormous size, extending "from a line drawn from the external angle of the orbit two thirds down the neck; the lower part of it hanging detached and resting on the upper part of the chest. It extended backwards behind the mastoid process, and occupied two thirds of the cheek in front. The child died of convulsions, and on examination of the tumour, it appeared to possess a perfectly granular structure, and to be a case of simple hypertrophy. During life, several surgeons had supposed it to be a case of aneurism by anastomosis, and had advised ligature of the carotid—an operation which, as the author remarks, would probably have had no effect in checking the tumour.—Mr. DUKE, *Provincial Medical and Surgical Journal*, No. xxi. *Feb.* 19, 1842.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

Laceration of the Vagina and Escape of the Child into the Abdominal Cavity. In this case no instrument had been employed, nor had there been any violent manual interference, nor was the labour extraordinarily protracted or severe; yet rupture of the vagina took place, the womb remaining perfectly entire. The child passed into the abdomen of the mother, and was thence extracted by the Cæsarean section.—Mr. Blenkinsop, *Provincial Medical and Surgical Journal*, No. xi. *Dec.* 11, 1841.

Kibstein as a Sign of Pregnancy. The author detected it in 48 out of 50 cases, in the urine of pregnant women. In that of 17 non-pregnant women, he could not discover any trace of it.—Mr. Letheby, *Medical Gazette*, No. xiv. *Dec.* 24, 1841.

Fœtal Disease. The reporter saw occasion to perforate the head of a fœtus which could not pass, and he then extracted the child with the common forceps. Two quarts of sero-sanguinolent matter came away; and on examining the child's head, the remains of an enormous sac were discovered, which had widely separated the bones and compressed the brain, of which organ all that was found, was a quantity not exceeding two ounces. Notwithstanding this extensive disease of the cerebrum, and the operation, the child lived for fifteen minutes. From this case, the author infers the propriety of using the common forceps after perforation, as this operation does not appear to be necessarily fatal. In support of this view, he relates a case, in which, in consequence of an accident, he removed from a child of 7 years, a quantity of brain amounting to an inch square; yet recovery, without a single unfavorable symptom, followed.—Mr. Grantham, *Medical Gazette*, No. xiv. *Dec.* 24, 1841.

Knot on the Funis, causing Death of the Fœtus. A pregnant woman was seized with pains about three weeks before her time. By the use of proper means, parturition was postponed till the full time, when the child was born in a state of decomposition. The funis was soft and shrivelled, and there was a knot upon it so tight as completely to arrest the umbilical circulation. This accident doubtless took place in consequence of the uterine efforts three weeks previously. —Dr. Grieve, *London and Edinburgh Monthly Journal of Medical Science*, No. i. *Jan.* 1, 1842.

Presentation of the Upper Extremities, and Spontaneous Evolution (?) The author, after detailing a difficult case of his own, notices the great hazard both to mother and child, of a presentation of the upper extremities; yet happily this presentation is rare. Dewees had never seen a case of this sort. Collins could not find an instance of it out of 16,654 births in the Dublin lying-in hospital. Clarke, during his attendance in the same institution, found only one case reported (and this on the authority of a midwife), out of 17,922 births. As regards spontaneous evolution, Collins thinks this occurrence is so rare, that, in a practical point of view, it may be regarded as "almost fanciful." Denman, however, states that nature sometimes effects an evolution, and the author of this paper records one.

The following is a case in point, which confirms the experience of Denman and others, that in this presentation nature will sometimes, unaided, effect a delivery, and makes it conclusive that we are justified under some circumstances in considering the propriety of delay even in this most perilous condition, but I am satisfied we should never indulge such a hope except where the pelvis is very large and well expanded, or the child very small. On the 29th of April, 1838, I was called to Mrs. W———, the wife of an overseer on one of the plantations in

my neighbourhood, who had been in labour during the preceding evening and night, under the management of an ignorant woman. On examination, I found the child's shoulder forced low, and firmly impacted in the pelvis; the hand and arm protruding, much swollen and livid; pain almost constant; the uterus firmly contracted on its contents, so that the presenting part did not yield in the least to pressure; indeed, it was perfectly immoveable. The mother's pulse was feeble and very much hurried, but the uterine action continued most violent. I at once judged the only hope of relief to consist in lessening the body of the child by perforation. An experienced medical friend being near, I sought his assistance. He agreed with me exactly in regard to the deplorable condition of our patient, and expressed a doubt whether she could survive long enough for us to procure obstetrical instruments, which were not at hand. While we were expressing our views and sympathies, the midwife came from the adjoining room, and announced the safety of our patient. The child was delivered without aid, but whether evolution took place, or whether the child was forced out doubled up on itself I cannot say, as I was not in the room at the moment it was effected. The child was at the full period, large, and somewhat swollen. The capacity of the pelvis was very great. The women was of a healthy, vigorous constitution, and convalesced speedily. She had given birth to several children previously, and has also to one since, without the slightest difficulty.—Dr. Tyler, *Maryland Medical and Surgical Journal*, No. i. *July*, 1841.

Chinese Midwifery Case. Some time ago, Pofa, the secondary wife of Mr. Chang, who lived at Hosham, a woman of tender years, though fully formed, when she became pregnant, labour came on at the eighth month; she had severe pains for several days, and the child was born, but shortly died; she again became pregnant, was prematurely delivered, and the child died as before. I then said that they must inform me when she was again in labour. The next year, at the eighth month, she was again in labour, which continued for three days, without success; when suddenly recollecting my words, they sent off post haste to call me; on the road I met the coachman, who said he was going to call her parents to take a final leave of her; when I arrived it was already night; on feeling her pulse I found it was not yet at the lowest ebb, and that she was still healthy. The midwife, on being questioned about the affair, said, that the child's head presented but could not come out. I ordered her to be put quickly to bed, and not to be disturbed, giving her at the same time a little medicine to soothe the womb. The next morning her husband came to me laughing, but did not speak. I asked the state of matters, and he said all is well. Yesterday, said I, the child's head was at the gate of life, how is it now? He answered, it has disappeared, and with a loud laugh went off. 120 days after this, that is at the term of twelve months after conception, she was delivered, and they said I was the child's father (ascribing the merit of saving its life to me), and it is now eight years old. And now I come to know, that on former occasions, they had pulled out the child by force, and it was only because the woman was young and strong that she survived.

In another part of this singular production, we are informed, on the authority of "the great pharmacopœia," "that pregnancy generally continues for seven or eight months, and sometimes for one or two years, and, in some rare cases, even for four years, and this should be made known!" Truly we may say the Chinese are a wonderful people!—*Chinese Treatise on Midwifery, translated by* Dr. Lockhart. *Dublin Journal*, No. lx. *Jan.* 1842.

Croup. The author, after detailing two fatal cases, observes: the important practical lesson, forced upon our notice by the cases just detailed, is the necessity of paying prompt attention to every case of hoarseness that occurs at this delicate age. To the superficial observer (as in both instances, I acknowledge, happened to myself) the affection may seem too slight to be made the subject of medical

treatment, as it does not appear to interfere with the health or animation of the child, which continues to look as well, and play as merrily as ever, but not so in reality; the nature of the part attacked is such, and such is its structure, that before the disease has given sufficient warning of its approach its work is done, and medicine is unable to snatch the victim from destruction.

In speaking of the treatment adopted in the second case, I shall merely remark that I did not resort to general bleeding, both from the child's tender age (eight months), and because he had previously been weakened by leeches a few days before. Nor, indeed, am I disposed to think, that in cases where the disease is so purely local as it was here proved to be by the dissection, such a heroic remedy would prove generally eligible. Undoubtedly, in cases complicated with pneumonia, or even an extensive general bronchitis, it would be both desirable and necessary, but not at all so much so in a case only implicating the lining membrane of the larynx. My chief reliance, therefore, was in emetics and in mercury. In the selection of an emetic, I preferred hippo wine, as being equally effectual, and more safe than tartarized antimony, which I had found last winter to depress unduly the infants I had to deal with in the workhouse. Mercury, so much lauded in the treatment of this disease, I had recourse to, both because of its generally admitted power of checking or preventing the effusion of lymph in inflammation, and because I have experienced its great value in croup in other cases in which I have tried it. I gave it accordingly in large and repeated doses, and without any unpleasant effect, except that it did not accomplish the purpose for which it was exhibited. It was also employed as a dressing to the abraded surface of a blister, a method which I have found, on several occasions, highly satisfactory, in children of a very early age, threatened with hydrocephalus, and who were by this means immediately relieved from convulsions which had continued for two or three days from fever, and even from strabismus and coma.—Dr. Duncan, *Dublin Journal of Medical Science*, No. lx. *Jan.* 1842.

Ergot of Rye. In this paper the author endeavours to show, first, that ergot of rye, improperly administered, produces puerperal convulsions, "as a remote effect;" secondly, that it gives rise to the hour-glass contraction; and thirdly, that it gives a predisposition to hydrocephalus, in the early stage of infantile life. The chief or only cases in which the author appears to think it admissible, are, when there is serious hemorrhage from detachment of the placenta, accompanied with deficient uterine tone; and, in the latter stages of labour, in checking hemorrhage from whatever cause. Dr. Catlett, *Edinburgh Medical and Surgical Journal*, No. cl. *Jan.* 1, 1842.

Analysis of 265 Presentations in Labour.

Table of the different Presentations in 265 *Cases.*

Cranial, 260; breech, 3; feet, 1; placenta, 1. Total, 265.

Cranial Presentations.

Face presenting posteriorly	——	197
Face to right sacro-il. synch.	195	
Face to left sacro-il. synch.	2	
Face presenting anteriorly	—	63
Face to right acetab.	—	1
Born with face to pubes	1	
Born with face to sacrum ..	0	
Face to left acetab.	—	62
Born with face to pubes	4	
Born with face to sacrum	58	

Mr. Joseph Bell, *Medical Gazette*, No. xii. *Dec.* 10, 1841.

NEW SUBSTANCE, GRAVIDINE, AS A SIGN OF PREGNANCY. The fluid portion of the urine of pregnant women being drawn off, there appears a "natural sediment," which, whether held in solution, or separated by ether, has a striking resemblance to the serous globule; but when in a sedimentary state, bears an equally strong resemblance to the milk-globule in recent milk. This substance differs from albumen and caseum, the two animal substances most analogous to it: from the former, in being soluble in water by means of heat; from the latter, in being soluble by sulphuric and nitric acids. From gelatine it also differs: first, in being precipitated from its solution in water on cooling; secondly, though partially precipitated by tannin, the precipitate was soluble in water on boiling. The author calls it "gravidine," both from *gravidus* big with young, occurring as it does in pregnant women; and also from *gravis* heavy, seeing that it falls to the bottom of the vessel. Kiestein is but the pellicle which results from the decomposition of gravidine. As the globules forming the latter substance are decomposed, urates and purpurates are developed in the urine; and when these have broken up and assumed new combinations, the triple phosphates appear, with that beautiful crystalline appearance, described by Dr. Bird as one of the characteristics of kiestein.—Dr. STARK, *Edinburgh Medical and Surgical Journal*, No. cl. *Jan.* 1, 1842.

ON THE INCIPIENT STAGE OF CANCEROUS AFFECTIONS OF THE WOMB. Dr. Montgomery conceives that there is a stage of cancer of the womb which precedes that condition usually regarded as the first stage, but which is characterized by well-marked physical signs, and curable by appropriate treatment. The chief reason why practitioners in general have overlooked this fact is to be found in the neglect of vaginal examinations in cases where the earlier symptoms only of carcinoma are observed; and in this neglect they are confirmed by the common but erroneous supposition that the disease does not occur before a rather advanced period of life, and that its existence is incompatible with regularity in the menstrual function.

The general symptoms which indicate the incipient stage of carcinoma are sharp, but fugitive lancinating pains in the back and loins, across the pubes and shooting along the front of the thigh, or in the course of the sciatic nerve, producing numbness and sometimes debility of the whole limb. There often exists a fulness or decided tumour in one or other iliac hollow, with fixed pain and tenderness proceeding from the abdominal ring; the patient suffers from dysuria and has a sensation about the lower part of the rectum, as though she were affected with piles. Menstruation usually occurs regularly, but occasional bursts of hemorrhage take place in the intervals of the menstrual periods, and there is little or no leucorrheal or serous discharge. On an examination *per vaginam* the os uteri is found to project more than natural into the passage, it is irregular in form, and its margin is hard and often fissured. In the situation of the muciparous glands several small, hard projections may be felt, like grains of shot or gravel, under the mucous membrane, and pressure on these gives pain. With this there is usually a turgid state of the os uteri, which presents a deep crimson colour when examined with the speculum, while the projecting points have a blueish hue.

In this stage the disease often continues for years, the patient having only occasional attacks of pain and uneasiness with weeks of freedom from suffering. By degrees, however, the uterine symptoms become aggravated, the general health is impaired, and the signs of what is commonly called the first stage of cancer are found to exist. The vague complaints of the patient are often referred to rheumatism, sciatica, or gravel, and thus the time for affording relief is allowed to elapse unemployed.

Frequent examination has convinced Dr. Montgomery that the first discoverable morbid change, which is the forerunner of cancerous disease, takes place in and around the glandulæ Nabothi. The coats of the vesicles become thickened, and scirrhous matter is deposited around them, which gives to them at first the resem-

blance to grains of shot or gravel. The fulness in the iliac hollow is produced by the swelling of the ovaries or of the glands at the side of the uterus, a condition of much more frequent occurrence in all stages of carcinomatous disease than is usually supposed, and one the existence of which should immediately lead to the adoption of very decided measures

The treatment of this state of the uterus consists in the employment of local depletion, which will frequently need to be repeated, and in the administration of mercury so as slightly to affect the system. Iodine, the iodide of potassium or of iron may be afterwards used with advantage, and counter-irritation by blisters to various parts with the warm bath or hip bath will likewise be found of service. A degree of tenderness of the uterus sometimes remains behind after the graver symptoms have subsided. It is best relieved by the warm bath and by anodyne applications to the part, or a solution of the nitrate of silver. This can be applied by means of a bent glass tube of about an inch in diameter, which the patient, lying on her back, can introduce as far as its curvature, and then pour into the upper end the medicated solution, which will immediately flow to the os uteri and remain in contact with it until the tube is withdrawn, an advantage which is not obtained by any other method of applying lotions to this part.

Dr. Montgomery is convinced that the affection is curable by these means, while he has no doubt of its being an early stage of cancer of the womb. Of the truth of this fact evidence [?] was afforded on examination by Dr. Greene, of the body of a woman who died of carcinoma of the rectum. The fundus and body of the uterus were free from disease, but the lower part of the cervix and the os uteri presented precisely the characters above described, especially that of the feel as if they were grains of shot, or sharp gravel imbedded in its substance.

Dr. Montgomery, *Dublin Journ. of Med. Science*, Jan. 1842.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

Recovery after 2 drachms of arsenic were taken. A boy, seventeen years of age, took 3ij of arsenic, but made it known within a quarter of an hour afterwards. Six grains of tartar emetic were given; vomiting was kept up for two hours; he was bled copiously; injections were thrown up into the bowels, and a blister was applied to the stomach to relieve pain in that organ. On the fourth day the boy was so well that all apprehensions respecting him were laid aside.—J. Toogood, Esq., *Prov. Med. and Surgical Journal*, No. xiv. *Jan.* 1, 1842.

Static Lung Tests. This paper is the sequel of a former one designed to prove the insufficiency of the static lung tests, or rather of the data hitherto employed in discussing the value of these tests. Thus as regards the weight of the lungs of still-born children, Schmitt makes the maximum as high as 1661 grains, Orfila only 5861; while, as regards the minimum, Haartman, in four still-born children, found the smallest weight 1066 grains, while Lecieux states it at 340. If the various tables of the authors just named, along with those of Jörg, Eisenstein and Zebitsch, Devergie, Taylor, the Procès Verbal, and the author of this paper, be collated, it will be seen that in more than one instance, the maxima in still-born children fall but little short of those of children that have lived one month; while, in one case, the highest number in the still-born greatly exceeds the highest in those born alive. The author points out the serious inconveniences to which such discrepancies may lead in medico-legal investigations.

Ploucquet's test, or that which is drawn from the weight of the lungs as compared with that of the rest of the body, has some advantages over the one founded on the absolute weight of the former, inasmuch as the results seem more uniform.

The following are the general conclusions of this valuable paper:

"*Weight of the Lungs.*—1. The weight of the lungs of still-born children of

the same age varies within wide limits; the chief causes of difference being the sex and the weight of the body.

"2. The weight of the lungs in mature still-born children is as follows: greatest weight, 1661; least weight, 340; average weight, 874.

"3. The weight of the lungs in mature still-born children of the male and female sex respectively is as follows: greatest weight, 1661, 1492; least weight, 360, 340; average weight, 950, 809.

"4. The weight of the lungs in children who have respired also varies within wide limits; the chief causes of difference, in addition to those which affect still-born children, being the degree and duration of respiration.

"5. In children who have survived their birth one month or less, the highest recorded weight is 2440 grains; the lowest 432 grains; and the average 1072 grains.

"6. The weight of the lungs for males and females respectively, at the same ages, is as follows: greatest weight, 2440, 1745; least weight, 432, 479; average weight, 1121, 982.

"7. The weight of the lungs increases with the increasing perfection of the respiration, but is very slightly augmented by imperfect respiration.

"8. The weight of the lungs also increases with the duration of the respiration, but appears to be less when respiration has continued more than one hour and less than twelve, than when it has lasted less than one hour.

"9. The mean weight of the lungs in mature children who have lived one month or less exceeds the mean weight in mature still-born children by somewhat less than one fourth, the numbers being 574 and 1072.

"10. The average and extreme values drawn from small numbers of facts differ widely from each other, and cannot be depended upon for medico-legal purposes.

"11. The average values cannot be safely employed as standards of comparison, and the extreme values admit of very rare application.

"12. If the absolute weight of the lungs is employed as a test of respiration, the value obtained in an individual case ought to be compared with the average or extreme numbers obtained for the same weight of body.

"The following propositions have an important bearing on Ploucquet's Test:

"1. The weight of the lungs both before and after respiration increases with the weight of the body; but the proportion which the lungs bear to the body decreases as the weight of the body increases

"2. For the same weight of body the weight of the lungs varies within wide limits, and *vice versa*, for the same weight of lungs the weight of the body varies within wide limits. This variation is more considerable after respiration than before it.

"3. The weight of the body in still-born children is greater than in children born alive; the former exceeding the latter by nearly one third.

"4. The weight of the lungs is subject to much greater variation than that of the body.

"5. The weight of the lungs is much greater in the male than in the female.

"1 *Ploucquet's Test.* The proportion which the weight of the lungs bears to that of the body, like the absolute weight of the lungs, varies within wide limits; the proportion in mature still-born children being as follows: greatest proportion, 1 : 24; least proportion, 1 : 176; average proportion, 1 : 57.

"2. The proportion in males and females respectively is as follows: greatest proportion, 1 : 24, 1 : 36; least proportion, 1 : 176, 1 : 119; average proportion, 1 : 53, 1 : 63.

"3. In children who have survived their birth one month or less, the highest recorded proportion is 1 : 19; the lowest, 1 : 132; and the average, 1 : 38.

"4. The proportion for males and females respectively at the same ages is as follows: greatest proportion, 1 : 19, 1 : 19; least proportion, 1 : 132, 1 : 96; average proportion, 1 : 35, 1 : 43.

"5. The proportion which the lungs bear to the body increases with the increasing perfection of the respiration, but is very slightly augmented by imperfect respiration.

"6. The proportion also increases with the duration of the respiration, but appears to be less when respiration has continued more than one hour and less than twelve, than when it has lasted less than one hour.

"7. The average proportion in mature children who have lived one month or less, exceeds that in mature still-born children; the numbers being 1 : 57 before respiration, and 1 : 38 after respiration.

"8. The proportions calculated from a small number of facts differ widely from each other, and cannot be depended upon for medico-legal purposes.

"9. The average proportions cannot be safely employed as standards of comparison, and the extreme values, though more to be depended on than the highest and lowest weight of the lungs, are of very limited application.

"10. If the average or extreme proportions are employed as standards of comparison, the proportion obtained in any individual case must be compared with the average or extreme numbers calculated for the same weight of body.

The observations contained in the present essay lend strong confirmation to the unfavorable opinion expressed on a former occasion of the static-lung tests as tests of respiration. Whether employed to distinguish respiration from non-respiration, or respiration from inflation, they are alike insufficient, except in cases of extremely rare occurrence, where we can make use of the extreme values. On the supposition that the question of inflation has no place, the static lung tests are as unnecessary as they are useless; if we have proved that either respiration or inflation has taken place, they can only be employed with advantage in the extremely rare instances just alluded to, viz. where we can employ the extreme values. Hence, then, the proposition which concludes my first essay requires to be slightly modified, and will stand thus.

"The static lung tests are utterly useless for all practical purposes, and ought not to be relied on in medico-legal enquiries except in rare instances, where the extreme values can be employed."—Dr. Guy, *Edin. Med. and Surg. Journal*, No. cl. *Jan.* 1, 1842.

Insufficiency of Albumen as an Antidote to Corrosive Sublimate. After pointing out Orfila's mistake in supposing albumen to be an antidote to the bichloride of mercury, the author remarks: "It is known that certain ammoniacal salts, if present in sufficient quantity, *entirely prevent the precipitation of corrosive sublimate by albumen.* Muriate of ammonia is one of these, a salt existing in the animal fluids. Muriate of soda, another salt found universally in animal fluids, has the same effect, though in a less degree. I might add many others; but already enough has been said to show *the inadequacy of albumen as a test for corrosive sublimate.* As regards the detection of mercury, the dismissal of albumen from our list of reagents is not to be regretted, while we possess the means of reproducing that base *in its metallic state,* a condition that ought, as in the case of arsenic, to be insisted on at all times by our public tribunals."—John T. Barry, *Pharmaceut. Journ.*, No. vii. *Jan.* 1, 1842.

Case of Poisoning with a Minim and a half of Laudanum. The author delivered a poor woman of a fine female child, and before leaving her, prescribed a draught, containing twelve minims of tincture of opium, in an ounce of pimento water, with a view of relieving the after-pains; this was on Monday, and on the Wednesday following, the nurse gave the child half a teaspoonful of the draught, in order to compose it and keep it from crying. The author found it in a state of profound coma, and notwithstanding all the means put in requisition, the infant died fourteen hours from the taking of the dose. Dr Christison has reported a case of a like fatal result, in consequence of a child, 3 days old, having had the fourth part of a mixture containing ten drops of laudanum—a quantity greater than that of the present case. The author justly infers, from his case, the great caution requisite in administering opium to infants.—Mr. Everest, *Lancet*, No. xxii. *Feb.* 26, 1842.

ANIMAL CHEMISTRY AND PHARMACY.

EXPERIMENTS ON ASAFŒTIDA. For determining the quantity of sulphur in asafœtida a Florence flask, surmounted by a couple of funnels, answers perfectly, as the quantity of nitrous acid always present in the upper space prevents the possibility of any of the sulphur being dissipated in the form of sulphurous acid gas. After the whole of the asafœtida has been apparently acidified into a transparent liquid by a lengthened ebullition, it deserves remark, that no trace of sulphuric acid will be found in it by the solution of any barytic salt; and that to make this test effective the liquid must be evaporated nearly to dryness, and then treated with distilled water. On filtering this solution, and pouring into it the barytic test, a copious cloud immediately ensues. From one hundred grains of good asafœtida thus oxygenated, sulphate of baryta will be obtained equivalent to two grains of sulphur. This quantity is the mean result of a great many experiments upon different samples of the drug. I shall endeavour, in a future communication to the Society, to account for the singular fact, why the acidified sulphur does not in the first instance affect solutions of baryta.

Asafœtida occurs in commerce in very different states of purity and composition. A specimen in *tears*, furnished by Mr. Herring, had a specific gravity so low as 1·25 (which is that of fine cochineal), and it left after incineration in a platinum capsule, only five per cent. of earthy and alkaline matter, chiefly phosphate of lime, with a little carbonate of potassa. Good common asafœtida, milky-white, semi-hard, has a specific gravity of 1·31, and affords about twelve per cent. of incombustible ashes, consisting of silica, carbonate and phosphate of lime, with a trace of potassa. Ordinary massive asafœtida has a specific gravity of 1·35. It affords twenty-five per cent. of incombustible ashes, consisting in a great measure of siliceous and calcareous gravel, from the soil round the root of the plants which yielded the asafœtida.

Pure asafœtida consists of about 44½ per cent. of resin and 2 of oil. The sulphur is contained in the resin, and has probably a share in the production of the offensive fumes most irritating to the eyes, which are exhaled from the resin at and above its fusing point of 243° F.—Dr. URE, *Pharmaceutical Journal*, No. ix. *March*, 1, 1842.

ARTIFICIAL HARROWGATE SALTS. Where the genuine Harrowgate water cannot well be procured, the following will be found a good substitute:

℞ Sulphatis potassæ cum Sulphure (Ph. Ed.) .. ʒj.
Potassæ bitartratis .... ʒss.
Magnes. sulphat ..... ʒvj.
Aquæ destillat .... lbij.
Solve.—Capiat dimidium p. r. n.

The above is sufficient for a quart, and ought to be taken early in the morning before breakfast, and be followed by a walk, to produce the desired effect.

The artificial Harrowgate salts are very much employed, and not unfrequently by those who drink the genuine water, for the purpose of increasing its aperient power. The salts may be made as follows:

℞ Sulph. potass. cum sulphure .... ʒvj
Potass. bitartratis ..... ʒj
Pulv. magn. sulph. ..... ʒvj
M. bene.

The usual dose of the above is one teaspoonful in a small tumbler full of tepid water, early in the morning.—Mr. JOHN MACKAY, *Pharmaceutical Journal*, No. vii. *Jan.* 1, 1842.

MEDICAL STATISTICS.

Health of the Labouring Population of Kelso, in two Decennial Periods. This is a valuable paper, which we are induced to notice, in order to furnish practitioners throughout the country with an opportunity of comparing the facts of the author's paper, with those of a like kind which may exist elsewhere. The total number of cases entered for the first decennial period, extending from 1777 to 1787, is 4705; for the second decennium, extending from 1829 to 1839, 8034; making in all 12,739. The total number of deaths is 423.

In a table designed to show the mean relative prevalence of various epidemic and endemic diseases, such as ague, fever, smallpox, chickenpox, scarlet fever, measles, hooping-cough, and erysipelas, and their proportion per cent. to all other diseases, we find that the total amount of these diseases was, in the first decennium, 33·07; in the second, 15·35. Cases of ague appear to bear an extraordinary proportion, in the first decennium, presenting an average of nearly one seventh of all cases coming under treatment; nay, in some of the separate years, their proportion rises even as high as a fifth; while, in the second decennium, the average proportion of cases of ague is only $\frac{1}{600}$th of the general mass of disease. The author accounts for this immense difference by improvements on the land, as drainage, cultivation, and by the superior construction of houses. In the first period, fever has a proportion of 12·71, and a mortality of 0·68; in the second, the proportion is 7·36, and the mortality 0·34. Smallpox is greatly less in the second period. Of the remaining epidemical diseases, in all, with the exception of erysipelas, the proportion is higher in the second than in the first period.

From a table showing the proportion per cent. of diseases of the nervous apparatus to all others, we find that the amount of relative prevalence in the first decennium was nearly double that of the second. Yet, on further calculation, it appears that the relative mortality exceeded that of the first in the proportion of 20 to 15.

From a table showing the proportion per cent. of diseases of the respiratory apparatus to all others, we find that maladies of this sort constituted, at an average, during the first decennium, nearly a tenth of the whole cases brought under treatment; and that, in the second decennium, their prevalence was slightly increased. Of 4·60, the average mortality per cent. during the first period, 1·09 or nearly a fourth was owing to this class of ailments; while, in the second period, they produced fatal results in only 0·67 per cent.; thus still retaining, however, nearly the proportion of one fourth the average mortality per cent. from all diseases of the latter period.

From a table showing the proportion per cent. of disease of the circulatory apparatus to all other diseases, we find that the prevalence of the former has been five times greater in the second period than in the first, yet still amounting to a very insignificant proportion. The mortality in the second period is 0·09 per cent. of all diseases treated. In the first, no affection of this class has been assigned as a cause of death.

From a table showing the proportion per cent. of diseases of the digestive organs to all other diseases, we learn that this class of diseases has been nearly twice as prevalent in the second period as in the first; the mean proportion in the first having been 28·34; and in the second 15·77 per cent. upon all kinds of diseases taken collectively. The difference of mortality in the two decennia, from diseases of this class, is most remarkable. In the earlier one, of 100 cases of diseases of the digestive organs, 6·73 ended fatally; in the second only 1·44 proved mortal.

Regarding the seasons of the year, in which the greatest mortality prevailed, the record enables the author to offer little information in regard to the first period, and none whatever in regard to the second. Of 100 deaths recorded in the first six years of the first decennium, 26·72 occurred in spring, 30·18 in summer, 12·24 in autumn, and 25·86 in winter.—Dr. Charles Wilson, *Quarterly Journal of Agriculture*, No. lv. *Dec.* 1841.

PART FOURTH.

Medical Intelligence.

TABLE OF MORTALITY FOR LONDON,

For the Fourth Quarter of 1841: Showing the number of Deaths from all causes registered in 14 weeks, from Sept. 25, 1841, to Jan. 1, 1842; also for the whole year 1841.

Causes of Death.	Total Deaths. During the Quarter.	Total Deaths. During the Year.
Class I.		
Smallpox ..	68	1053
Measles	408	973
Scarlatina ..	180	663
Hooping-cough	634	2 278
Croup	126	391
Thrush	61	260
Diarrhœa	110	465
Dysentery ..	20	78
Cholera	3	28
Influenza	13	220
Ague.....	3	15
Remit. Fever .	1	16
Typhus	288	1151
Erysipelas ..	64	251
Syphilis	7	29
Hydrophobia .	2	3
Total	1988	7874
Class II.		
Cephalitis....	121	615
Hydrocephalus	374	1739
Apoplexy	231	866
Paralysis	207	751
Convulsions ..	572	2778
Tetanus	3	20
Chorea	1	6
Epilepsy	41	181
Insanity	11	43
Delir. tremens	27	83
Disease.....	101	478
Total	1689	7560
Class III.		
Laryngitis ..	6	27
Quinsy	20	71
Bronchitis ..	135	665
Pleurisy	29	93
Pneumonia ..	931	3668
Hydrothorax .	45	208
Asthma	291	1351
Consumption .	1672	7326
Disease.....	175	768
Total	3304	14177
Class IV.		
Pericarditis ..	3	30
Aneurism	6	36
Disease	237	927
Total	246	993
Class V.		
Teething	227	913
Gastritis enter.	215	957
Peritonitis ..	13	59
Tabes mesen.	73	261
Worms	5	23
Ascites	13	31
Ulceration ..	20	74
Hernia	25	103
Colic or ileus .	33	130
Intussusceptio.	3	14
Stricture	4	26
Hæmatemesis	..	11
Dis. of stomach	26	179
Dis. of pancreas	1	1
Hepatitis	6	59
Jaundice	34	111
Dis. of liver ..	110	436
Dis. of spleen .	..	2
Total	808	3390
Class VI.		
Nephritis	8	26
Ischuria	1	7
Diabetes	2	18
Cystitis.....	5	12
Stone	3	17
Stricture	4	15
Disease.....	29	139
Total	52	234
Class VII.		
Childbirth ..	88	345
Paramenia ..	3	10
Ovarian dropsy	1	18
Disease	20	137
Total.....	112	510
Class VIII.		
Arthritis	..	2
Rheumatism .	28	120
Disease	28	129
Total.....	56	251
Class IX.		
Carbuncle....	..	1
Phlegmon ..	3	5
Ulcer	10	24
Fistula	3	13
Disease	1	12
Total.....	17	55
Class X.		
Inflammation	65	238
Hemorrhage..	28	165
Dropsy	450	1720
Abscess	44	169
Mortification	54	241
Purpura	2	12
Scrofula	22	105
Carcinoma ..	93	373
Tumour ..	31	100
Gout	12	61
Atrophy	78	363
Debility	290	1114
Malformations	5	36
Sudden deaths	191	759
Total.....	1365	5456
Class XI.		
Old age	778	3373
Class XII.		
Intemperance	3	30
Privation ..	9	36
Violent deaths	284	1148
Total	296	1214
Class XIII.		
Not specified	50	197

	For the Quarter.		For the Year.
Total Deaths from all causes (Males)	5455	....	22,995
,, ,, (Females) ..	5306	....	22,288

TEMPERATURE DURING THE QUARTER AND YEAR.

	For the Quarter.		For the Year.
Highest	63·7	....	87·0
Lowest	28·2	....	14·9
Daily mean	46·4	....	51·7

THE DOCTORS *versus* THE ASSURANCE COMPANIES.

As we find that the question—*Whether medical men are entitled to claim fees when referred to respecting the health of persons seeking to insure their lives?*—is still debated in medical journals and in medical parties, we feel ourselves called on to make a few observations on the subject. Our limits allowing only of the most concise exposition, we shall endeavour to give to our arguments something of the precision of law without its verbosity.

As in this case the Doctors do not seek to establish a claim against their patients, but against the companies applying for information, we shall here consider the Doctor as plaintiff, and the Directors of the Companies as defendants.

On behalf of the former it is urged—

My time is money to me. I never give an opinion without the fee of a guinea, as is well known to those who apply to me. The directors of an office ask me to detail the circumstances of a case which I attended twelve months ago, and request me to state all the circumstances which I consider necessary to enable them to judge of the present state of my patient's health. A compliance with this request must necessarily occupy a considerable portion of my time, for I must have an interview with my patient, to ascertain that I have his authority for disclosing the facts of his case; to refresh my memory as to the circumstances of his case; and to enable me to write an opinion on the present state of his case. After devoting sufficient time for these purposes, I have not only detailed in writing all the circumstances faithfully to the directors, but have expressed my candid opinion as to the best course for them to pursue to effect a profitable contract with the insurer, my late patient; I am, therefore, entitled to my fee, not only in respect of my own loss of time incurred at the special request of the directors, but also on account of the benefit derived by them, from a disclosure of circumstances and the expression of my opinion. *This is the plaintiff's case.*

The defendants contend—

We are not *principals* in this transaction. There is no privity of contract between us and the plaintiff. In the letter addressed to him we stated, that we acted but as *agents* for his patient. The work and labour for which this action is brought, was not done in our retainer. The plaintiff knew this before he incurred the loss of his time; and we have no more to do with this work and labour than with the work and labour in respect of which the plaintiff now requires a bill of parcels through us. If the plaintiff be a physician, he received from the patient a fee for the work at the time it was performed; and if he considers himself entitled, on a *quantum meruit*, to remuneration for a detail of a past transaction the character of which might be properly concealed at the time but which the present interest of the patient requires should be now disclosed; why, let the physician get paid by the patient who has induced us to take the trouble to ask a bill of parcels in his name; a trouble we incurred out of *delicacy* to the physician, who might prefer giving us a confidential detail of circumstances, to publishing the facts to his patient in person. As far as we are concerned, we neither asked nor desired an examination of the patient by his own physician; to whose opinion, in *this case*, we do not attach the slightest value; as we judge of the proposer's present state from the report of our own physician, to whom we pay a fee for advising us, *which fee we do not seek to charge to the proposer.* Then, as to our entering on a profitable contract, the result must determine that fact: it promises to be profitable, or we should not enter into it; and we do all that becomes honest men, meaning to perform their own engagements, when we endeavour to ascertain the trustworthiness of the party before we enter into a contract with him.

Suppose a man want credit, must he not prove his circumstances to be trustworthy before he can obtain it? Suppose he purchase a Government annuity, must he not give evidence of his age before it be granted to him? Would the tradesman remunerate the referee of his customer? or Government pay the cost of the baptismal certificate? Certainly not. Why then should an insurance office bear the expense of proving the health of a proposer to be trustworthy, as a condition precedent to his obtaining a contract for a large sum payable at his

death, for a small annuity during his life? If we, the defendants, had adopted the plaintiff as our adviser, and paid him as such, should we not be told from the Bench—"You cannot question the truth of the physician's statements in a court of law. You employed him yourselves—you took the case out of the hands of the proposer, who was bound to make out his health as trustworthy by medical testimony, and you bribe his physician for a report to which you now object? You have made yourselves principals, and the physician *your* agent, instead of his being the agent of the proposer?"

This is the case on the behalf of the defendants; and whatever has been urged by them as against a plaintiff who is a physician, they repeat with double force when the claimant is an apothecary.

Now, as impartial judges on these statements, in which there is no issue as to *facts,* but a mere appeal to our legal or moral consideration, we do not hesitate to pronounce FOR THE DEFENDANTS. Indeed, if the question were simply between medical adviser and patient, we should say that it would be beneath the dignity of a liberal profession to exact a fee for the mere particulars of services rendered and paid for. The phrase "Bills of Parcels," which we have heard used in these discussions, is homely, but pertinent; and for such details we think even the customer ought not to pay: but to seek to charge an independent party with a price for this *invoice,* certainly appears to us as little short of absurd.

Syrian Medical-Aid Association.

A SOCIETY has recently been established under this name, chiefly through the benevolent exertions of Sir Culling Smith and Dr. Hodgkin. Its nature and objects, and its high claims on the sympathy and co-operation of the rich and charitable, will be sufficiently manifest from the following brief extract from a prospectus issued by the Association:

"Of all the blessings which England might, out of her abundance, impart to the Syrians—the one which they most desire and appreciate—is medical skill. The natives who profess medicine are utterly ignorant of the science, and are, generally, of the meanest capacity. The poor people all over the country are in sad misery, for want of medical advice; and they flock to such travellers as are in company of a physician. There is no such thing as a medical man in all Syria; nor do the people appear to have any local knowledge of herbs even. No hospitals, dispensaries, infirmaries, or public charities exist, to receive the diseased, the mendicant, the orphan, or the helpless widow. Sympathy can but offer prayer and hope; while sickness preys unchecked upon its victims, without science to eradicate, or benevolence to alleviate it.

"To alleviate these painful circumstances, a society has recently been formed, entitled the 'Syrian Medical-Aid Association,' for the purpose of sending out in the first instance, a surgeon or physician, with an assistant, and a store of drugs, &c. It is proposed that he shall visit the indigent sick, gratuitously. While it is not intended that he should make any direct missionary effort, it is considered indispensable that he should be a person of a decidedly Christian character; and who would thankfully avail himself of every opportunity to invite those, whom he might find favorably disposed, to have recourse to the Saviour—the physician of souls. It is hoped that he will thus become a valuable pioneer to the labours of Assaad Kayat, and other agents of the Syrian-Education or kindred Societies; the local knowledge of whom will open to him continual opportunities of usefulness.

"In this manner it is anticipated, that, under the providence of God—

"I. Much suffering and misery will be relieved; and one of the greatest of earthly blessings will be conferred upon the Syrian people.

"II. Our national character will be favorably exhibited. In the place where England's voice was lately heard in the roar of cannon and the cries of the wounded, it will now find its way to the bedside of the sick and dying, in the gentle accents of pity and relief.

"III. This manifestation of Christian benevolence may win a favorable hear-

ing for those who shall come to teach the divine principles, of which such a practical exemplification will have been thus presented.

"IV. A benefit will be conferred on resident European merchants, and travellers; many of whom fall victims to disease, for want of competent medical advice. The medical agent will be allowed to receive payment for services rendered to these classes.

"To these benefits may be added the probable advantages of more closely studying, with the view to prevention and treatment, the plague, and other terrible diseases, which yearly destroy thousands in Syria and the adjoining countries."

Medical Reform.

The following is an extract from an excellent Memorial recently addressed to Sir James Graham, by the Council of the North of England Medical Association:

"The grievances of medical practitioners may be briefly summed up, as consisting—in the unfair competition arising from the dissimilarity in the qualifications of candidates for medical practice and honours—the general neglect of their interests, ensuing from the want of a proper organization in the professional body throughout the empire—the absence of a protective power for the qualified practitioner, against the encroachments of unqualified and ignorant pretenders to medical knowledge—the exclusion of their *members* from all control over the management of most of the medical corporations.

"The powers vested in the corporations are suited to the accomplishment of certain objects *only*. They are of a limited character, and not adapted to the superintendence of the profession *as a body*, how well soever they might, *with certain modifications*, promote the welfare of the particular departments to which they belong.

"For the *general* direction and control of medical affairs in each division of the United Kingdom, your memorialists are of opinion that a presiding body or council is required, which shall be responsible to the Crown and to the profession.

"To obviate the disadvantages arising from the dissimilitude in the regulations of the various examining and licensing boards, and to ensure the general competency of all future candidates for medical practice, your memorialists conceive that a definite qualification should be established, without which no person should receive a license to practice; that such qualification should be made uniform throughout England, Scotland, and Ireland; and that such license should convey the right to practice every branch of the profession, and in any part of the United Kingdom.

"The possession of a NATIONAL LICENSE TO PRACTICE would by no means interfere with the existing classes of physicians, surgeons, and general practitioners, although a contrary statement has been pertinaciously adhered to by the opponents of medical reform, and by those who are interested in the continuance of the present state of affairs; neither would it take from any university or college the privilege of educating students, or of granting degrees, diplomas, or other honorary distinctions. The national license would certify, that the licentiate had been educated and examined in all the branches of medical science, to what branch soever he might more especially devote his attention, either in study or in practice; and although the London corporations collectively have declared that 'a course of study and a test of competency adapted to each particular branch of the profession, affords a much surer guarantee for a high standard of qualification in each branch, than could be obtained by a course of study and examination common to all,' the most eminent members of their councils have individually pronounced, that the education of the physician and surgeon should be the same; and as the general practitioner combines in his practice, the practice both of the physician and the surgeon, it follows that all practitioners should in the first instance, be similarly qualified. Degrees and titles in medicine and in surgery (with admission into the Colleges of Physicians and Surgeons) would, under such an arrangement, be (as they now are) open to those who might be anxious to procure them. The honorary diplomas granted by the College of

Surgeons in London have increased in number since the passing of the Apothecaries' Act, although the course of study and examinations requisite for their attainment are entirely self-imposed on the part of candidates. Physicians residing in the provinces have also, at various times, connected themselves with the London College of Physicians, although the authority of that college is virtually restricted to the metropolis and its immediate neighbourhood."

BOOKS RECEIVED FOR REVIEW.

ENGLISH.

1. Reply to Dr. Chalmers's Objections to an Improvement of the Legal Provision for the Poor in Scotland. By W. P. Alison, M.D. &c.—Edin. 1841. 8vo, pp. 56.

2. The Retrospective Address delivered at the Ninth Anniversary Meeting of the Provincial Medical and Surgical Association. By R. J. N. Streeten, M.D.—Worcester, 1841. 8vo, pp. 904.

3. The Double-Flap and Circular Amputations contrasted, being an abstract of a first Prize Essay at the University of Edinburgh. By F. N. Machardy, A.M. & M.D., Surgeon.—London, 1841. 8vo, pp. 53.

4. The means of promoting and preserving Health. By T. Hodgkin, M.D. Second Edition, with Additions.—London, 1841. 8vo, pp. 480.

5. An Investigation of the proposed Scheme of Medical Reform in reference to Chemists and Druggists. By G. Crook, M.P.S.—Lond. 1841. 8vo, pp. 32.

6. The Anatomy of the Arteries of the Human Body. By R. Quain.—Part 10. 12s.

7. The Chemist; or Reporter of Chemical Discoveries and Improvements. Edited by C. Watt, and John Watt, Jun. Vol. ii. —Lond. 1841. 8vo, pp. 392.

8. Notes on the United States of North America, during a Phrenological Visit in 1838-9-40. By George Combe.—Edinb. 1841. 3 vols. 8vo, pp. 371, 400, 488. 31s. 6d.

9. Human Physiology; illustrated by Engravings. By R. Dunglison, M.D., &c. Fourth Edition, with numerous additions and modifications. — Philadelphia, 1842. Two vols. 8vo, pp. 579, 657.

10. Elements of Materia Medica and Pharmacy. By O'Bryen Bellingham, M.D., Lecturer on Mat. Med. Dublin. Edited by Arthur Mitchell, M.D. Part I.—Dublin, 1841. 8vo, pp. 302, 6s.

11. A Collection of Plates illustrating the Theory and Practice of Midwifery, accompanied by an explanatory Text. Translated from the French by Em. Debout, M.D. Part I.—London and Paris, 1841. Large Folio. Plates xxvii.

12. Natural History of Man. By J. C. Prichard, M.D., F.R.S., M.R.I.A. Illustrated with Plates. Nos. I, II, III. 2s. 6d. each. —Lond. 1842. 8vo.

13. Atlas illustrative of the Anatomy of the Human Body. By J. Cruveilhier, M.D. The figures drawn from nature, by Em. Beau, with explanations by C. Bonamy, M.D. Parts I—IV, 2s. 6d. each.—Lond. 1841-2. Royal 8vo.

14. Further Observations on Medical Reform. By J. Kidd, M.D., Regius Professor of Medicine in the University of Oxford.—Lond. 1841-2. 8vo, pp. 16. 1s.

15. An Essay on the influence of constitution in the production of disease. By E. O. Hocken, M.D.—Lon. 1841. 12mo, pp. 64. 2s. 6d.

16. A Treatise on Dislocations and Fractures of the Joints. By Sir A. Cooper, Bart. F.R.S. A new Edition much enlarged. Edited by Bransby B. Cooper, F.R.S.—Lon. 1842. 8vo, pp. 576. 20s.

17. An Exposition of the Pathology of Hysteria: elucidated by a reference to the diagnosis &c. of hysterical Amaurosis. By E. O. Hocken, M.D.—Lond. 1842. 12mo, pp. 32.

18. On the Treatment of Stone in the Bladder by medical and mechanical means. By R. Willis, M.D.—Lon. 1842. 8vo, pp. 103.

19. Spinal and Nervous Diseases, Rheumatism, and Paralysis: or Cases and Observations illustrating an improved treatment. By J. H. Robertson, M.D.—Glasg. 1842. 8vo, pp. 119.

20. Minutes of the Committee of Council of Education: with Appendices. 1840-41.—Lond. 1841. 8vo, pp. 482.

21. Catalogue of the Preparations in the Anatomical Museum of George Langstaff, Surgeon.—Lond. 1842. 8vo, pp. 518. 10s.

22. A practical Treatise on Venereal Diseases; or Critical and Experimental Researches on Inoculation applied to the study of these affections. By Ph. Ricord, M.D. Translated from the French by H. P. Drummond, M.D.—Lond. 1842. 8vo, pp. 384.

23. The Administration of Medical Relief to the poor under the Poor Law Amendment Act, &c.—Lond. 1842. 8vo, pp. 136.

24. Letter to the Earl of Aberdeen on the state of the Schools of Chemistry in the United Kingdom. By W. Gregory, M.D., Professor of Chemistry in the University and King's College, Aberdeen.—Lond. 1842. 8vo, pp. 35.

25. Principles of Surgery. By J. Syme, F.R.S.E., Professor of Clinical Surgery in the University of Edinburgh. Third Edition enlarged.—Lond. 1842. 8vo, pp. 503, with plates and woodcuts. 21s.

26. Hydropathy; or the Cold Water Cure, as practised by Vincent Priessnitz. By R. T. Claridge, Esq.—Lon. 1842. 8vo, pp. 318. 5s.

27. A Practical Treatise on Auscultation. By M. Barth, M.D., and H. Roger, M.D. Translated from the French, with Notes, by P. Newbigging, M.D.—Edinb. 1842. 8vo, pp. 398.

28. An Investigation of the present unsatisfactory and defective state of Vaccination, &c. &c. By Thomas Brown.—Edinb. 1842. 8vo, pp. 139. 4s.

29. The reciprocal Influence of Body and Mind considered. By W. Newnham, Esq.—Lond. 1842. 8vo, pp. 688. 14s.

30. Transactions of the Cornwall Medical Association for the year ending the 8th February, 1842.—St. Columb. 1842. 8vo, pp. 64.

31. A Dispensatory or Commentary on the Pharmacopœias of Great Britain. By Robert Christison, M.D., F.R.S.E., &c.—Edinb. 1842. 8vo, pp. 978. 18s.

32. The Hunterian Oration, delivered at the Royal College of Surgeons in London, Feb. 16, 1842. By G. G. Babington, Surgeon to St. George's Hospital.—London, 1842. 8vo, pp. 32. 1s.

33. Lectures on the Diseases of the Urinary Organs. By Sir Benjamin C. Brodie, Bart., F.R.S., Serjeant-Surgeon to the Queen. Third Edition, with alterations and additions.—Lon. 1842. 8vo, pp. 379. 12s.

34. Principles of Human Physiology, &c. By W. B. Carpenter, M.D.—London, 1842. 8vo, pp. 680. 20s.

35. A Practical Treatise on Nervous Impediments of Speech, Stammering, &c.—Fifth Edition. By J. Poett, M.R.C.S.—Lond. 1842. 12mo, pp. 99.

36. Discourse on the enlarged and pendulous Abdomen, showing it to be a visceral affection, &c. Second Edition, with a Dissertation on Gout, &c. By R. Franklin, Esq., Surgeon.—London, 1842. 8vo, pp. 121. 5s.

37. The First and Second Reports of the Medical Missionary Society in China: with Minutes of Proceedings, Hospital Reports, &c.—Macao, 1841. 8vo, pp. 68.

FOREIGN.

1. Grundzüge einer neuen und wissenschaftlich begründeten Cranioscopie (Schädelehre). Von Dr. C. G. Carus, M.D. &c. —Stutgard, 1841. 8vo, pp. 87.

2. Nosologisch-therapeutische Untersuchungen über die brandige Zerstörung durch Behinderung der Circulation des Blutes. Von C. F. F. Hecker, M.D. Professor der Medicin, &c. zu Freiburg.—Stuttgart, 1841. 8vo, pp. 68.

3. Zwölf Briefe über das Erdleben. Von Dr. C. G. Carus, M.D. &c.—Stuttgard, 1841. 8vo, pp. 296.

4. Sulla Temperatura dell' atmosfera nell' isola di Malta. Memorie contenante i resultati delle osservazioni termometriche dall' anno 1820 all anno 1840, del Dr. Saveria Schembri.–Malta, 1841.8vo, pp. 23.

5. Ueber das Licht und dessen Einfluss auf die natur, besonders auf den menschlichen Organismus. Ein Vortrag, gehalten von G. P. Holscher, M.D.—Hannover, 1841. 8vo, pp. 20.

6. Nouveau Manuel d'Anatomie descriptive et raisonnée, avec un Atlas de 34 Planches. Par C. Crommelinck, M.D. &c. —Bruxelles, 1841. Roy. 8vo, pp. 436.

7. Mémoire sur l' Opération du Strabismus Spasmodique. Par C. Crommelinck, M.D.—Bruges, 1841. 8vo, pp. 22.

8. De eventu Sectionis Cæsareæ. Dissertatio Inauguralis. Auctore Carolo Kayser.—Havniæ, 1841. 8vo, pp. 122.

9. De Ulcere Ventriculi perforante. Diss. Inaug. E. A. Dahlerup, auctore.—Havniæ, 1841. 8vo, pp. 77.

10. De Prolapsu funiculi Umbilicalis. Diss. Inaug. Auctore J. C. Saxtorph.—Havniæ, 1840. 8vo, pp. 68.

11. Quid faciant ætas annique tempus ad frequentiam et diuturnitatem morborum hominis adulti, disquisitio medico-statistica. Auctore E. Fenger, L.M. Univ. Havn. —Havniæ, 1840. 8vo, pp. 71.

12. Mémoire sur la revulsion morale dans le traitement de la Folie. Par F. Leuret, M.D. &c.—1841. 4to, pp. 33.

13. Om Sygpleien i Straffeanstalterne i Norge. Ved Professor Holst, M.D.—Christiania, 1841. 8vo, pp. 112.

14. Fortegnelse over de auctoriserede Læger i Norge.—Christiania, 1831. 8vo, pp. 8.

15. Mémoires, &c. Par le Docteur Jules Guerin.—Paris, 1841. 8vo.

16. Guide Pratique pour l'étude et le traitement des Maladies Syphilitiques. Par L. Ducros, M.D.—Par. 1841. 8vo, pp. 323.

17. Anatomisch-Microscopische Untersuchungen zur allgemeinen und Speciellen Pathologie. Von Gottlieb Glage, M.D., &c. Zweites Heft.—Jena, 1841. 8vo, pp. 206.

18. Femoris amputatio ex acetabulo, Caroli Dauntonis Markensis, A.D. 1738-9, a Roberto Jeffrey, Chirurgo Huntspilliari, feliciter institute, ac nepote suo, Josepho Jeffrey, M.D., nunc memorata.—Coloniæ, 1841. 8vo, pp. 15.

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